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EDITED BY
J. RIDDLE GOFFE, PH.B., M.D.

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ORIGINAL ARTICLES.

THE MANAGEMENT OF PNEUMONIA PATIENTS.[1]

BY SIMON BARUCH, M.D.,
OF NEW YORK.

MY chief reason for bringing so trite a subject before you is that the fatality of pneumonia and the frequency of the discussion of its treatment indicate that it is very far from being settled in the minds of the profession. Another reason is a desire to summarize a personal experience extending over one-third of a century in city and country, private and hospital practice, and which represents a therapeutic evolution, a consideration of which may contribute an humble stone to that therapeutic structure which can be reared only by the aggregation of individual observations. It is hoped that the discussion of this subject to-night may furnish some clue to a better management of patients suffering from this very prevalent and fatal malady. The most effective therapeusis may be evolved only from the most thorough comprehension of the nature of disease. Whether stumbling upon it accidentally, as in the case of quinin for malarial diseases, or by a gradual evolution, as in the Brand bath for typhoid fever, or by a process of reasoning, as in the thyroid-gland treatment for myxedema, our therapeutic achievements are in proportion to our mastery of the nature of the disease.

The history of pneumonia illustrates this idea. I will not weary you with the recital of its historical stages, but confine myself to personal observations. The teaching of the schools and text-books in 1859–'62, and the practice in the military hospitals in which I served as interne, were clearly antiphlogistic, because the conception of lobar pneumonia at that time was a pure inflammation of the lung, whose tendency was to destroy life by apnea (Watson). Delirium, pyrexia, and other threatening manifestations were regarded as "direct evidence that the pectoral mischief is telling through the circulation of venous blood through the brain." It was but a legitimate deduction from this view that the chief agents to bring about recovery were the so-called antiphlogistics, by which it was hoped to throttle the local disease. It would be a bootless task to review the contending opinions prevailing before and at the time mentioned. Long before this period Dietl of Vienna had learned from the homeopaths (who were genuine Hahnemannians, and not the mongrel breed met with to-day) that pneumonia is a self-limited disease, tending to terminate favorably if the patient's vital forces be not despoiled by blood-letting, mercurials, and starvation.

Although he combated the prevailing "hematomania" with energy, he failed to make any permanent impression. In the first decennium of my active practice, Hughes Bennet and Austin Flint labored to inculcate similar doctrines. Their efforts were more successful, because the medical profession was beginning to emancipate itself from the thraldom into which that bloodthirsty monster phlogosis had cast them. In Vienna, a therapeutic nihilism attained ascendency, which, though not as fatal, did not fill the full measure of the physician's duty. Then came the quinin, aconite, and digitalis, and, later, the antipyretic era, from which the profession has not yet quite emancipated itself.

We stand to-day on the threshold of a view of croupous pneumonia which will contribute more to the saving of lives than all the doctrines and remedies suggested since the days of Hippocrates. The student is no longer taught, as I was taught, that the pneumonia patient dies from apnea. Heart failure is the specter that now stands at the bedside of the patient in this and, for that matter, in most other acute diseases. But we are, fortunately, not lapsing into the Brunonian theory of asthenia, which demanded enormous quantities of alcoholic and other stimulants. To-day it is an almost universal axiom in the therapeutics of croupous pneumonia to prevent and combat heart failure. The view that *this is an infectious disease, whose chief recognizable lesion is in the lungs, but whose lethal tendency is in the overwhelming of systemic force and vigor*, is obtaining more and more recognition.

I would go further than this, even. Careful clinical observation and a judicious sifting of the testimony of reliable practitioners have brought us to the belief that croupous pneumonia is no more a lung disease than is typhoid fever a bowel disease. Whenever this doctrine shall receive universal acceptance, we will cease to *treat the disease*, and we shall be prepared for a more effective management of patients suffering from it.

It may be said that this idea is obtaining adherents in certain quarters. All of our recent text-books insist upon maintaining the patient's vital powers as the main indication. That great American clinician, Austin Flint, read a paper before the State Medical Society in 1877, on "Pneumonic Fever," in which he referred to the analogy to typhoid fever. My interest being aroused, I discovered that, 200 years ago, Huxham had insisted upon the infectious character of pneumonia. Thus history has repeated itself in this as in other diseases, *before* the microorganisms assigned to them had been discovered.

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[1] Read before the New York Academy of Medicine, December 3, 1896.

As to *etiology:* The present state of our knowledge may be briefly stated to be, that while cold may be a predisposing factor which diminishes the patient's resisting power, the Sternberg-Fraenkel diplococcus is an important factor in the production of croupous pneumonia, because it is present in about seventy-five per cent. of cases, although in some cases there are doubtless other organisms present. Sternberg and others have found the diplococcus in the mouths of healthy persons. Its mode of entrance into the lung and its pathogenic course are not yet clearly determined; its aspiration from the mouth seems to be claimed by most observers. The presence of some constitutional depression is a potent etiological factor. Age is a predisposing and exempting factor, inasmuch as young children are rarely attacked; while it is most prevalent among adults, and liability to it diminishes with advancing years.

Typhoid fever presents analogous conditions. The Eberth bacillus enters through the mouth and is lodged and developed in Peyer's glands. The chief differences are that the Eberth bacillus is not, like the diplococcus, capable of producing other diseases, and that the life period of the former is three to four weeks, while that of the latter is five to ten days. The analogy certainly holds with regard to the influence of depreciated constitution and age as etiological factors.

Analogy in Symptoms.—In pneumonia we have an increased leucocytosis, pyrexia, and more or less overwhelming of the nervous system, which is reflected to the heart, lungs, and other organs. The dyspnea is, I believe, more the expression of a special toxemia than of the crippling of the lung, because it is not always in proportion to the extent of the lesion, and it disappears at the crisis, while the lung is still greatly obstructed by the exudates. In addition, we have cough, which of course is due to the disturbance of the lungs and bronchi.

We have practically the same manifestations in typhoid fever, differing only in regard to the habitat of the microörganism, diarrhea taking the place of cough. The fever runs a different course because of the difference in the life-period of the organisms involved in each disease.

The most striking and important similarity is that the chief point of attack, in both diseases, is upon the nervous system; the toxemia resulting from the life and death of the microörganisms spends its chief force upon the nerve centers. This explains the well-recognized clinical fact that the general symptoms are rarely a correct index to the local lesion. Dyspnea and fever, especially, may be extreme, and the case may terminate fatally, with slight involvement of the lung, just as we may observe the most serious general condition in typhoid, without evidences of local lesion.

Crisis in croupous pneumonia is signalized by complete cessation of all the general symptoms, because the life-period of the microörganisms is terminated. And yet the lung remains more or less solidified by exudates, as is evident from the physical signs continuing. So do the general symptoms of typhoid fever cease with the cessation of the life-period of the Eberth bacillus, although the intestinal lesions are still so far from being removed that great care needs to be exercised with regard to diet, rest, and other preventive measures.

The *prognosis* of croupous pneumonia and typhoid fever bears close resemblance in many respects. The effect of previous mode of life, habits, and environment, before and during the illness, upon the issue of the case, is very much alike in both diseases, as is the influence of childhood upon the prognosis.

Having as briefly as possible in the time at my disposal traced the close analogy in the etiology, symptoms, and prognosis of these diseases, I propose to deduce from this analogy the expediency of following in pneumonia, as nearly as the differences indicated above may admit, the line of management which has afforded the best results in typhoid. We have learned from sad experience that the chief indication in typhoid fever is to enhance the patient's resisting capacity to the lethal agencies evolved by the infection-process.

It is my aim to emphasize a similar cause of action in pneumonia. The management of the pneumonic patient, which I propose to present to your consideration, is the result of an evolution from the methods, which some of you, like myself, have been taught, and which, doubtless, some of you, as I, have practised for years.

A distinct mental picture of my first case of croupous pneumonia rises before me. The patient was a young soldier, a hardy mountaineer, in whom a large portion of the right lung was consolidated. The chief surgeon of the hospital directed, as was the custom in 1862, flax-seed poultices to the chest, and a mercurial purgative, to be followed by nitrous powders, a preparation which is happily unknown to our recently graduated colleagues, consisting of 8 grains of nitrate of potassium with ½ grain of calomel and ⅛ grain of tartarized antimony, these powders to be administered every three hours until the gums were touched; *i. e.*, until ptyalism ensued. Wet cups to the chest were added to emphasize the doctors' blows upon the enemy—inflammation of the lungs—with a view to deplete the latter. The inflammation was resolving beautifully when the left lung was attacked. The same treatment was resorted to, with the exception of a blister being substituted for the wet cupping as a concession to the evidently enfeebled condition of the patient. This lung also was beginning to resolve, but the vital powers had been so exhausted by the depleting measures, that the system was unable to furnish the necessary conditions for restoration. The result was that the disease was practically cured, but the patient died from sheer depletion, as evidenced by a necrotic gray deposit on the blistered surface.

This result of what was the classical treatment at that time (1862), made a deep impression on my youthful mind as a crucial test, and I say it with some satisfaction that no patient of mine has ever been salivated or cupped, and very few blistered since that time. I continued for a long time to commence the treatment with a mercurial purge, to give veratrum to reduce the pulse, to poultice the chest for comfort to the patient, and to give small doses of tartar emetic as an expectorant, and morphin to allay the cough. But the teachings of Hughes Bennet Austin Flint, and Horatio C. Wood, gradually weaned me from this mildly spoliative practice. Until a few years ago I felt as helpless in a case of pneumonia as I did at that time in typhoid fever. Recovery in both diseases seemed to be the result of conditions over which my control was feeble or lacking. The patient's constitution, the type of the disease, and his environment played the chief *rôle*. Treatment was symptomatic in both diseases—expectant it was termed—and not inaptly, for I always expected something to happen which I seemed powerless to prevent. When I learned the true principles and value of the Brand method in typhoid fever, a positive treatment was at my command by which, *if called early*, serious and fatal complications, against which I had formerly felt impotent, could be prevented. For the comfort and the sense of security derived from this method, since I mastered its technic, I shall ever be grateful to its author. And herein I was recently corroborated by Gilman Thompson, Delafield, Ball, and Northrup in the "Section of Practice."[1]

It has been my ardent desire to reach a similarly comforting attitude in pneumonia. Weary of the expectant plan, and observing its enormous fatality, especially in those depreciated by faulty modes of life and habits, I looked to hydrotherapy for succor. While I cannot say that the latter has been reached to an entirely satisfactory degree, observation and reflection have produced a method of management whose clinical value deserves to be tested further.

The prevailing type of the disease should be carefully considered. It has been demonstrated by careful observers that the vaunted success of certain methods of treatment may be attributed to a change of type in the disease and the previous conditions of the patient. Any new treatment should therefore be approached with caution and judgment.

Dr. Leaming, whom many of you remember as a practical, safe clinician, gives a graphic delineation of this idea in his little book published in 1884.

"When I began my professional career, I believed, as I had been taught, that active interference was necessary in every step of this disease, to prevent destructive inflammation. But I soon found, and by accident, that cases would get well without active treatment; that the expectant plan and wise management was the best; simple medication, with stimulants and supporting alimentation. The mortality was so small that it seemed unnecessary for an uncomplicated case to reach a fatal result. When the fatal form of pneumonia began to occur in New York, I, with other physicians, was surprised at the failure of the managing method. The failure of the latter rendered a resort to the heroic method a necessity."

The type of pneumonia in this city appears to have remained as grave as it was in the time of which Leaming wrote. We still see and hear of cases dying rapidly. As recent sad illustrations in our own ranks may be cited the deaths of the lamented Loomis and of the brilliant young clinician Roosevelt. *In hospital and private practice this disease is more fatal than any other acute disease of adults.* In the New York City Board of Health statistics it ranks next to phthisis in fatality. I apprehend that the chief reason of this great fatality may be sought for and found in the helplessness of physicians in the presence of this fearful disease.

It follows, therefore, that the first consideration in the management of these cases is a due regard for the prevailing type.

Complete rest of body and mind, and good nursing, are essentials in furthering recovery. This cannot be too earnestly urged upon the patient and his family. The ventilation of the sick-room, too, which is much opposed by the laity, should be anxiously watched by the medical attendant, who is too prone to yield to existing prejudices, and thus to become an unwilling accomplice in depriving the patient of this greatest pabulum in infectious diseases—fresh, pure air. The patient and family should be positively assured that there is no danger of taking cold if the body temperature is elevated to any considerable extent. In summer and winter the air of the sick-room should be constantly renewed, even at the cost of reducing its temperature in winter to an extent which may be uncomfortable to the nurses. During the late war, cases of pneumonia treated in tents in rigorous weather did far better than those treated in improvised hospital buildings.

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[1] *Med. Record*, November 7, 1896.

The diet should be restricted to milk and farinaceous broths, administered with precision, while the patient is awake, every two hours, in quantities ranging from four to eight ounces. I do not share the horror of asthenia in this disease, which is only too prevalent, and leads to undue feeding. The disease is of short duration ; it not infrequently suddenly attacks well-nourished persons in the midst of comparative good health. It seems an unphysiological proceeding to stuff these patients with concentrated foods, in large quantities, which they cannot assimilate, and thus to impose an additional tax upon the system. Stimulants, also, are rarely so necessary to the same extent as formerly, since the course of management here outlined was adopted. In alcoholic subjects whose consumption of liquor has been a daily habit and requirement, ½ to 2 ounces of good whisky every two or three hours may be useful, especially while resolution is going on, but not as a spur to a failing heart, as is commonly the practice. I am not quite sure on this point, hence still feel myself under the dominion of this idea. It would seem that inasmuch as a large part of alcohol is eliminated through the lungs, the latter are needlessly overburdened while they are straining to the utmost their functionary capacity. I should like to hear the experience of the fellows of the Academy upon this point.

Of medicinal agents I use but very few. Besides an opening dose of 10 to 20 grains of calomel, strychnin, and an occasional dose of morphin for pain, are the only medicines I have found of any real value. When the first sound of the heart becomes muffled or feeble, hypodermics of strychnin, $\frac{1}{30}$ to $\frac{1}{10}$ gr., every three or four hours, offer a valuable aid to tide the patient over a trying period. Given even to the production of trismus, if necessary, it is far superior to digitalis or brandy. I do not fear an occasional dose of phenacetin when the patient is restless, with high temperature, but it should not become a routine practice for temperature reduction. It is rarely required. Quinin, aconite, veratrum, digitalis, and other drugs, I have discarded after a prolonged trial.

The administration of calomel requires some detail. It should be placed, as Leaming and Cammann direct, dry upon the tongue and allowed to gradually disappear, being swallowed with the saliva, or, if necessary, washed down with a small quantity of water. These experienced practitioners tell us that "the inefficiency of the expectant method rendered a resort to the heroic a necessity, and with very encouraging results. Cases, such as had proved fatal by the mild treatment, were saved by the prompt exhibition of sedative doses of calomel, which are less depressing to the system than smaller doses." Today we are able to give a more rational explanation of the action of calomel in pneumonia than that of a "sedative." Its effect is twofold. First, it is a fact clearly established by Sternberg and others, that the diplococcus of Fraenkel, found most abundantly in the saliva, is destroyed by very feeble mercurial solutions. This may explain why the effect of calomel is so much more striking when allowed to slowly mingle with the saliva. Thus, the supply of microörganisms is at once cut off, together with toxins which would continue to be evolved from these, so long as they are living. This is not an unreasonable explanation of the remarkably rapid change in the symptoms of even desperate cases which are reported by Leaming, and which I have observed.

Secondly, a large dose of calomel removes ptomains that may have lodged in the gastrointestinal canal. Calomel is the only agent to which investigations (made before guaiacol was discovered) have conceded internal antiseptic properties. Moreover, it clears the *primæ viæ*, as we older practitioners were taught to do; it clears the ship for action, as it were. It also disgorges the portal circulation, and probably thus relieves the stasis existing in the pulmonary circulation indirectly. Be the explanation what it may, clinical observation in typhoid fever, pneumonia, tonsillitis, diphtheria, and other infectious diseases has convinced me of its value when given in one large dose in the beginning of the case. It very rarely produces serious purgation. Even when diarrhea exists, it does not salivate as readily as smaller doses, and it certainly requires no repetition. It is more easily retained by an irritable stomach than other medicines. It is my custom to direct the patient to rinse the mouth frequently with a saturated solution of potassium chlorate to insure against ptyalism, and to keep the mouth in a clean condition. Juergensen recommends weak mercurial solutions as a mouth-wash for the purpose of destroying the diplococci, whose favorite habitat is in the mouth.

Hydrotherapy, judiciously adapted to the indications of the case, has proven a valuable auxiliary in the management of these patients. In the croupous pneumonia of children, who are more easily handled, without great disturbance, the tub-bath is very useful when administered alongside of the bed, as in typhoid fever. The temperature should, however, rarely be below 85° F. Beginning with 95°, each bath may be reduced a few degrees, until the patient becomes accustomed to it, repeating every four hours until the temperature remains below 102.5°. Friction is a *sine qua non*, because chilling is more apt to occur in these patients than in typhoid fever, and for this reason the duration of the bath should be short—eight to ten minutes. The toxic agents which are operative in pneumonia appear to affect the heat-center quite differently from those evolved in typhoid fever. A bath of 80° F. often reduces the temperature in the former disease two to four degrees, while in the latter one degree would be a large reduction. Upon this clinical fact I have based a diagnostic bath which materially aids in the differentiation of typhoid fever from other diseases which so strongly resemble it during the first week. The value of the full bath in the pneumonia of children has been confirmed by the highest authorities, such as Penzoldt and Baginsky in Germany, Hutinel of Paris, our own Jacobi, and others.

In adults, however, I have given up tub-baths, although very cold baths (50°–60°F.) have been lauded by Juergensen and commended (65° F.) by chief-surgeon Vogl of Munich in a letter to myself. While they proved useful in many cases, I am convinced that the disturbance and agitation incident to a cold tub-bath increase the lung disturbance. If the patient is very dull, cyanotic, and presents great nerve prostration, resembling the typhoid state, I do not hesitate to choose between the two evils, an increase of the local disturbance and a decrease of nerve prostration, by plunging the patient into a bath of 80° F., or less, or seating him in water at 100° and and pouring several basins of water at 65° to 75° F. over his head and shoulders. This is a valuable heart tonic. It serves, by deepening the inspirations, to dislodge accumulations in the bronchi, which have crippled the healthy as well as the affected lung.

The most useful hydriatric procedure in pneumonia is the *wet compress*. This consists of three folds of thin old linen stitched together at the edges, which has slits corresponding to the axillæ, so that it may be wrapped around the patient's chest snugly. The slits are made sufficiently deep to allow the upper edge of the compress to reach above the clavicles, and admit of the junction of the flaps thus formed on each side to cover the shoulders. Two such jackets, and two pieces of closely woven thin flannel of the same shape, but an inch wider and longer, should be provided and fitted to the patient. One of the former is rolled up and soaked in a basin of water at 60° F., and wrung out so that it remains quite damp without dripping. The flannel is now spread out upon an even surface and the wet compress put upon it, so that there remains an edge of flannel about an inch wide all around. Both are rolled together half-way. While the patient is gently turned upon his left side, with the precaution of not allowing any exertion on his part, the compress is so placed upon the bed that the rolled part lies in close proximity to the left side of the patient, and the lower edge of the left slit is under the left axilla. Now the patient is quietly turned upon his back, so as to release the rolled-up portion. The latter is now unrolled, and both edges of the compress are brought forward upon the front of the chest and are thus made to envelop the latter snugly. The flannel cover, which has been allowed to lie upon the bed during the application of the wet compress, is now brought forward so as to quite cover the latter. It is secured by two safety-pins in front, and one upon each shoulder.

The well-known oiled silk jacket may serve as a model for the shape and manner of applying this wet compress. The latter should be changed every half-hour, unless the patient's temperature is below 102.5° F.; every hour unless it be 99.5° F., when it is discontinued. The removal is accomplished by preparing the second compress just like the first, paying attention to the water temperature being 60° F. When it and the flannel covering are rolled up in readiness, the first compress is removed and the second is applied. Thus a rotation is kept up every half-hour or hour as the case may require, night and day, unless the patient be asleep. The water in the basin should be renewed each time, and the compress rinsed off in another basin before it is rolled up for soaking, in order to insure thorough cleanliness and prevent furnuncles by furthering asepsis.

The technic of the procedure has been entered into with a detail that may seem needless. As will be shown later, these details insure precision, and upon their exact execution may depend success or failure. The physician should himself supervise the first application, just as he should supervise the first Brand bath in typhoid fever. A skilled nurse can apply these compresses with a minimum of disturbance.

There is need, too, of individualization. In the average case a temperature of 60° F. will be appropriate. Should the patient evince stupor or muttering delirium, a lower temperature should be adopted, and the chest should receive one or more dashes of colder water, before renewal of each compress. The same procedure is useful in bronchopneumonia, when the bronchi are blocked by secretions, or cyanosis exists. In a case which I had the privilege of seeing with Dr. E. J. Ware, this application proved its worth. The patient had passed through an attack of typhoid fever lasting some ten weeks; her condition was so precarious that when I entered an adjoining room she was bidding her relatives adieu. By skilful management she had been sustained up to this time. The right lung in its entire posterior aspect was solidified. The temperature was usually below 102° F., and the pulse exceedingly rapid. There was no dyspnea.

In this case the modified procedure referred to was extremely valuable. Inspiration soon deepened, the heart slowed, and in a few days the patient rallied from a most desperate condition.

A higher temperature than 60° F. may be used if there be much jactitation, insomnia, or excitability. In the latter event great benefit will accrue from allowing the compress to remain two hours and moistening it more thoroughly, which converts the compress into a soothing fomentation that is not relaxing like a poultice.

In a colleague, whom I had the privilege of seeing with Dr. Palmer Cole, there was complete involvement of the entire right lung, with temperature ranging from 103° to 105° F., the heart action being fair. The patient being a morphin *habitué*, there was a decided neurotic element in the case, involving insomnia and great jactitation. The compresses were only applied hourly, despite the high temperature, but they were allowed to be quite moist, in order to obtain a calming effect. Although the left lung became involved later, Dr. Cole informed me that the patient recovered from his desperate condition, and that, in his opinion, his life was saved by the management here outlined. No remedial measure deserves adoption by the profession unless the *rationale* can be satisfactorily explained.

According to my view of pneumonia crouposa, the therapeutic indications are (1) to stimulate and invigorate the nerve centers with a view to enhancing the patient's vital powers, (2) to prevent and control heart failure, (3) to reduce temperature, (4) to eliminate toxins.

The nerve centers are well stimulated and rehabilitated by the repeated gentle shocks and subsequent reactive stimulation of the sensory fibers in the skin, both of which are conveyed to the central nervous system and thence reflected to the organs, upon whose functionating capacity depends the patient's ability to resist the toxic agencies circulating in the blood. We aim here to accomplish precisely the same object as with the Brand bath in typhoid fever. The milder form of shock is better adapted to pneumonia, because it is less disturbing, and because the toxemia, induced by the diplococcus, is less intense in the average case, and certainly has only one-third of the life period of the Eberth bacillus.

After a few compresses the patient grows more calm, the inspirations, which are deepened by each application, continue deeper, dyspnea is markedly relieved, sleep ensues, appetite improves, and the skin and kidneys begin to act more freely. These clinical evidences demonstrate the correctness of the *rationale* enunciated above.

The maintenance of the heart action is accomplished by the wet compresses in the following manner: When the cold compress is applied, there is a rapid contraction of the cutaneous vessels, which raises the tension at once, but gives way to a tonic dilatation of these vessels, which is evidenced by a ruddy hue of the skin. This dilatation differs very decidedly from that relaxed condition of the cutaneous vessels produced by warm poultices. The latter relax the vaso-constrictors, producing a paretic condition of the vessels, or a stasis, while cold applications stimulate the vaso-dilators, giving rise to an active dilatation, with maintenance of the tone of the vessels, an active hyperemia, by reason of which the blood is propelled more vigorously through them. The heart is thus relieved; not by a *vis-a-tergo*, as is the case after digitalis, but by a *vis-a-fronte*, formed by broadening of the blood-stream in the cutaneous capillaries, whose enhanced tonicity aid at the same time in propelling the blood onward. Arterial tension is increased, as is evidenced by the better filling of the radial arteries. The right heart is indirectly aided by this enhancement of the general tone in the vascular apparatus, and may thus expend more force upon the pulmonary circulation, whose vessels contract more firmly by reason of the dilatation of the superficial vessels.

Romberg[1] has recently confirmed what I have, several years ago, and repeatedly since that time, insisted upon, that in acute infectious diseases we encounter disturbances of the circulation which manifest themselves clinically as reduced tension and diminished filling of the arteries, and which are commonly described as heart failure. Undoubtedly the condition of the peripheral vessels bears a very large share in the production of cardiac atony, as I have sought to impress when explaining the *rationale* of cold applications in typhoid fever and pneumonia.[2] Romberg has shown by experiments with injections into rabbits of Fraenkel's diplococci that the circulation is damaged by a paralysis of the vasomotors, while the heart itself remains unaffected. It is true that the right ventricle is overloaded because of lung infiltration, but that this does not so seriously cripple the heart as is generally supposed is proved by the fact, referred to above, that when crisis ensues, the compression due to the exudates is not removed at once, and yet the respiration and circulation are relieved as if by magic. This can only be accounted for, if I may be allowed to reiterate so important a statement, by the nervous system being suddenly relieved of the toxic elements generated by the diplococcus, whose activity ceases at once when it has reached the end of its natural life-period. It is probable that crisis ensues when the antitoxins evolved in the natural course of the disease have attained an overbalance of power. The battle between the diplococcus, with its allies, and the patient's vital powers, is at an end. The most important effect of cold applications in pneumonia is, therefore, the aid and sustenance they furnish to the nervous system, which bears the brunt of the fight. The improvement of cardiac action is one of the results of this effect.

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[1] *Berlin klin. Wochenschrift*, 1895, Nos. 51 and 52.
[2] "Uses of Water," vol. ii, p. 166.

Reduction of temperature is an important therapeutic element in these cases. Persistent high temperature may enfeeble the heart, and certainly depreciates the nerve centers. Some good clinicians, like Juergensen, claim that high temperature is the chief danger to patients suffering from pneumonia, and he advises in his latest work[1] that very cold baths, some below 60° F., are demanded to meet this "great danger." I shall not discuss this doctrine fully to-night. Since my argument against it before the New York State Medical Society in 1889, I have repeatedly expressed adverse views in this and other societies to this unfortunately too firmly established error, an error which has given unhappy prominence to the coal-tar antipyretics in the therapy of fevers. If any further testimony is needed to lay this ghost, which has so long affrighted timid practitioners, to rest, the discussion on fever in the Fourteenth Congress of Internal Medicine in April, 1896, demonstrates that we should cease to regard elevation of temperature as the cardinal symptom for therapeutic attack. While, however, these conclusions fully corroborate my own views expressed eight years ago, I may say that high temperature, though not actually and directly a lethal factor by inducing fatty degeneration of the cardiac muscular fiber, as claimed by Ziegler and others, does seriously cripple the work of the heart by imposing upon it more rapid action, and it does seriously interfere with the patient's comfort. High temperature, therefore, demands careful attention by measures that are not harmful like the routine use of coal-tar antipyretics. As I said elsewhere, I do not hesitate to use the latter occasionally when high temperature is associated with sleeplessness or great jactitation. They give great comfort to the patient, and are less annoying and disturbing than the wet compresses. But the latter are not used by me for their antithermic effect, which is only incidental.

The susceptibility of pneumonia patients to cold baths, and the great facility with which their temperature may be reduced, renders great care in the application of these measures imperative. For this reason I have abandoned cold baths, and have dwelt so minutely upon the method of application. That so mild a procedure as the wet compresses should be capable of reducing high temperatures in pneumonia, I have numerous charts to demonstrate. The decline is not as rapid as after cold baths, but it is pronounced and steady. It does not ensue after one or more compresses, nor does it follow the course of temperature reduction observed after cold baths in typhoid fever.

It decreases day by day one or more degrees. It is not the result of direct refrigeration; such an effect is neither aimed at nor obtainable. When a compress at 60° F. covered with flannel is applied around the chest of a pneumonia patient who presents a temperature of 102° to 106° F., there is an immediate cooling of the surface covered by it, which is followed by a gradual reaction with a more or less rapid rise of the surface temperature, until the latter is nearly the same as it was previous to the application. The surface is now bathed in a vapor produced by the heating of the compress. If the latter be allowed to remain sufficiently long, the flannel covering receives the vaporized water, and passes it outward until the compress becomes dry. But if the compress is changed as indicated above, the vapor is more slowly removed, and the skin and compress are found to be cooler than the flannel covering. Thus the gradual cooling process is continued until a fresh, cold compress is applied, when the skin, more sensitive by reason of having been bathed in this warm vapor, feels the shock more distinctly and reacts more fully. The error is not infrequently committed of covering a wet compress with oiled silk. While this would protect the bed and clothing of the patient, it would defeat the object of the compress by converting it into a poultice. If the body temperature is 103° F. or over, the compress applied as above becomes warm in half an hour, although evaporation of the moisture through the flannel renders the skin under it cooler than other parts of the body. When it is renewed, the repetition of the gentle shock and tonic dilatation occurs. Thus a slow cooling process, not relaxing or in any way depreciating, is maintained, which gradually lowers the general temperature, calms the patient, and contributes much to his recovery.

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[1] Penzoldt and Stinzing, "Allgemeine Therapie," 1896.

How far this cutaneous hyperemia acts as a revulsive, it is impossible to ascertain, but it is a well-known fact that such hyperemia is always accompanied by contraction of the blood-vessels in the parts underlying. Thus may a favorable effect be produced also upon the inflamed lung tissue, and its circulation be improved.

The elimination of toxins is promoted by the wet compress, as by all cold hydriatric procedures. It has been proved by Roque and Weil that the urotoxic coefficient of the urine is trebled after cold baths in typhoid fever. All the secretions of the body are increased by cold applications. The alkalinity of the blood is also enhanced by the latter, as demonstrated by Alois Strasser. Tassinari (quoted by Winternitz) says that after septic infection of rabbits, the alkalinity of the blood is reduced about one-half. And it has been shown by others that in all infectious diseases the blood is less alkaline. Since alkalinity of the blood is a prerequisite for the existence and activity of phagocytes, it is not unreasonable to assume that cold applications further the phagocytosis, and elimination of toxic products, by rendering the blood more alkaline. Hence Buchner is correct (as Winternitz claims) in asserting that by cold-water treatment the powers of resistance to infectious agencies are enhanced.

This antitoxic-eliminating effect is increased by copious libations of water. It is my custom to administer in pneumonia, as in typhoid fever, 6 ounces of water every two hours, alternating with the same quantity of milk, night and day, when the patient is awake. The enormous increase of urine is scarcely credible. I have charts showing from 60 to 122 ounces in twenty-four hours. Some of the well-trained nurses, who have seen much hospital service, have volunteered an assurance of the correctness of their reports, under the impression that I would discredit such large quantities.

There is a striking peculiarity impressed upon the regular course of croupous pneumonia by the method here outlined to which I desire to call attention. Although the fever, dyspnea, and other distressing manifestations yield, to a remarkable extent, in a large proportion of cases, in one or two days, the physical signs do not change in a proportionate degree. Indeed, I have observed a distinct crisis in only about forty per cent. of the cases so treated; in the remainder, the disease ended by lysis of a very slow type. Improvement of the general symptoms goes on, the patient seems well, and is anxious to rise, but a dull percussion-note, muffled breath-sounds, and bronchial whisper bear testimony to lingering exudates for many days.

As an example, I may cite the case of H. E., who sickened on December 8, 1895. His temperature ranged from 102° to 104° F. for four days, without any pronounced physical signs in the lungs, which were examined every day. On December 12th, consolidation of the entire posterior lower half of the right lung was made out. The mouth temperature was 104° F. at three P.M.; cough had been distressing several days; there were now rusty sputum and increased dyspnea. The family being greatly alarmed, Dr. A. A. Smith was called in consultation, but did not see the patient until the next morning. Calomel having been administered, the wet compresses were now applied, with the effect of bringing the temperature down two degrees in five hours. During the night, the compresses were, by a misunderstanding of the nurse, renewed every hour. The patient sleeping soundly for the first time since his illness, complained to me of the frequent disturbance. After twelve compresses, the temperature was 101° F. at eight A.M. When Dr. Smith saw him, at ten o'clock, he found him so comfortable that he expressed surprise at being called, and concurred in the treatment. Physical signs of consolidation were distinct. There had been no other treatment except 5 drops of dilute hydrochloric acid every two hours, as a placebo, followed by 6 ounces of water. Temperature reached normal point once every day for two days, and remained normal for ten days, when the patient was dismissed. Physical signs continued during Dr. Smith's attendance of five days, and dulness of the percussion-note had not entirely cleared up when I last saw him.

Clinical results confirm the *rationale* of this treatment, and attest its value. A quarter of a century ago the greatest living German clinician, Professor Niemeyer said:[1] "I have made extensive employment of cold in the treatment of pneumonia, and, relying upon a large number of very favorable results, can recommend the procedure. In all cases, I cover the chest of the patient, and the affected side in particular, with cloths, which have been dipped in cold water, and well wrung out. . . . In the hospital at Prague, every pneumonia is treated with cold compresses and, according to the statement of Smoler, it is exceptional for a patient not to feel material relief from the treatment."

Why has a treatment which has received high commendation by so eminent a teacher not become an established practice in a disease which so often baffles the physician under other management?

To the student of the history of hydrotherapy this question is not difficult. Although water is an orthodox remedy, to which Hippocrates devoted almost an entire book, and although it has been highly commended by eminent physicians at various times, it has not become the common property of the profession, because most of those who taught its use and value most earnestly failed to give definite directions for its application. Niemeyer illustrates this point. He simply advises "cloths wrung out of cold water to be applied to the chest" of the pneumonic patient. The temperature of the water, the duration, technic, frequency of repetition are left to the discretion and good or bad judgment of his hearers and readers, and yet these are far more important in hydrotherapy than are the dose, time of administration, frequency, etc., in prescribing medicinal agents.

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[1] "Text-book of Practical Medicine," vol. i, p. 185, translated by Humphreys and Hackley.

In a paper on pneumonia, published several years ago by an eminent American teacher, the following sentence occurs: "If the temperature in pneumonia "rises to 104°, 105°, or 106° F., I use cold baths or "cold packs." Such indefiniteness is to be greatly deprecated when coming from one who is highly regarded as a teacher and guide. A cold bath, without stated temperature, is generally understood to be a bath to which neither hot water nor ice has been added. Such a bath would have a temperature of 75° F. in August, and 45° F. in December, in this city. Thirty degrees in the temperature of a bath are capable of producing an immense difference for good or evil; in pneumonia it would react very unfavorably, according to my personal observation. Just as Niemeyer failed to create a permanent following for the practice which he so highly lauded, so has the justly famous teacher referred to failed to impress upon the profession a practice which he had taught in 1870, as follows: "If there be anything I should rely on in "pneumonia, if the temperature is very high, it is "cold-water treatment." If this excellent teacher had been as explicit in giving temperature, duration, etc., of the "cold-water treatment," as he was in giving the doses of digitalis, nitroglycerin, and camphor, the valuable lessons he endeavored to inculcate would not now (twenty-five years later) require to be taught anew; they would have served as a beacon-light to the vain searcher after reliable therapeutic methods in this fatal disease. Let me emphasize, therefore, that while I may have offered nothing novel or striking in this essay, its chief aim is to impress upon you the great import of giving definite prescriptions for all hydriatric measures in this as in other diseases, be they acute or chronic, for only by such precision may we obtain definite results.

Statistical evidence to prove the value of the measures here advocated, or of any other method of management, is indeed very difficult to produce. The type of the disease differs very much; in private practice the number of cases is too meager, and observations are too inaccurate and unreliable. I may say, however, that I have not lost a case of uncomplicated croupous pneumonia in private practice since the adoption of the management of patients suffering from it, here outlined. In hospital work the chief element of success with this method, *viz.*, its application in the early stages of pneumonia, is unfortunately absent. Its favorable influence upon the progress of the disease is attested, however, by the statistics of 156 cases in the J. Hood Wright Memorial (formerly Manhattan General) Hospital, in which the total mortality from pneumonia has been reduced one-half, since the method here advocated has been adopted by the entire staff; while in the cases admitted before the fifth day the mortality has been twelve per cent. against thirty-seven per cent. under the formerly prevailing expectant plan. These cases were under the observation and treatment of my colleagues, Drs. Daniels and Knickerbocker, and myself. The method described above is, with slight modifications, equally favorable in catarrhal pneumonia.

The ice-pack method recently advocated by Dr. Mays of Philadelphia, which claims a mortality of 3.58 per cent. in private practice, is worthy of mention in this connection, because its success is applicaable upon the theory that it fulfils all the therapeutic indications almost as well as the cold wet compresses. Ice is applied in bags which are wrapped in towels and placed over the affected area, with a view to reduce the inflammatory process in the lung by direct cold. That the latter is an erroneous idea has been proven by the experiments of Silex,[1] who has shown by experiments on animals, that "ice applications increase the "temperature of the organs over which they were "placed and which were to be cooled." This effect of local cold has long been recognized by hydrotherapists, who know that intense cold applied externally produces a compensatory hyperemia in the parts beneath, thus protecting the latter against destruction if carried too far. The *rationale* of the favorable influence of the ice-compress treatment, however, is not difficult to explain upon recognized principles of hydrotherapy.

The towels which envelop the bags of ice soon become thoroughly wet by condensation, and thus the application is practically a continuous wet compress. This together with its unevenness prevents the complete reaction which is so useful in arousing the nerve centers, but its being applied upon parts of the chest only prevents serious results from this source. The objection to ice compresses would seem to be their uneven surfaces, which renders them uncomfortable when applied to the posterior portions of the lungs, the patient lying on the back; and also that their weight when applied anteriorly must render them inconvenient. In consideration of these facts I have not felt justified in applying this method of ice packs so long as good results were obtained from the wet compresses.

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[1] *Münchener mediz. Wochenschrift*, 1893.

In conclusion I hope to have shown that

1. Pneumonia is, like typhoid fever, an infectious disease whose chief attack is upon the nervous system, as manifested by heart failure, and other signs.

2. The treatment should be applied, not to the disease, but to the patient, whose resisting capacity should be enhanced by all useful remedial agencies.

3. Calomel in a large dose, followed by wet compresses, adapted in duration and temperature to each case, with fluid diet, and an abundance of water internally, aided, if need be, by mild alcoholic stimulation and hypodermics of strychnin, offer at the present time the most favorable, yet not perfect, results in the management of patients suffering from pneumonia.

SOME DIAGNOSTIC CONSIDERATIONS OF HEMATOLOGY.[1]

By ARTHUR J. PATEK, M.D.,
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It is my intention to touch lightly on hematologic conditions that have been pretty thoroughly studied and present well-known clinical pictures, such as simple and pernicious anemia, chlorosis, and leukemia, and to leave unmentioned those branches of this science that have to deal with the methods of preparing and staining blood-preparations for investigation. I wish only to call attention to some of the diagnostic considerations of hematology with reference more especially to their application in diseases that are not purely affections of the hematopoietic system.

The blood, in addition to being the bearer of products to tissues for elaboration, and of elaborated products from tissues, is the carrier of many infectious germs, as the streptococcus and staphylococcus in septic conditions, the bacillus of relapsing fever, the typhoid bacillus, the gonococcus, and also of the ptomains elaborated by these and other bacteria. It harbors animal parasites, as the plasmodium malariæ and *filaria sanguinis hominis;* its own elements may demonstrate disease, as in the essential blood-affections—chlorosis, progressive pernicious anemia, and leukemia, in which these diseases are made manifest by abnormalities of the hemal constituents.

That the claim that hematology should be added to the symptomatology of all diseases not distinctly of a local character is not overzealous enthusiasm, is shown by the efforts that are being made to place it on a more sound footing and to enlist its services in the general study of disease. This labor has not been entirely fruitless, for though the list of diseases of which we have a definite hematologic knowledge is a small one, and our knowledge of the blood-elements is still very limited, yet careful observations and experiments by tireless workers have enabled them to formulate generalizations as to the symptomatology of the blood, which may act as valuable aids in diagnosis in certain obscure cases.

Without going into etiologic details, I wish to call your attention to a new granulation-cell discovered by Professor Neusser of Vienna, and demonstrated by him at the Medical Congress at Vienna in September, 1894. These granules are characterized as "perinuclear basophils," because they are basic as to their staining affinities, and perinuclear as to their grouping in the cell. You will find an exquisite specimen under the microscope. This preparation I have made from the blood of a lady who has been gouty for over thirty years. Neusser considers this cell diagnostic of uric-acid diathesis in its various pronounced and masked forms, having found it present in a large number of such cases, and achieved some success in directing his therapeusis accordingly. The granules he considers derivatives of the cell-nucleus, hence nuclein-products—advance-stages in uric-acid formation, the accumulation of which in the system gives rise to the various symptoms found in this diathesis.[1] Further investigations, however, are called for, and at the recent meeting of the American Medical Association in Atlanta, Osler announced that a report on this subject was in course of preparation.

In a general way, the affections in which the constitution of the blood may prove an objective symptom, having distinct bearing upon the diagnosis, may be classified as: (1) Acute febrile affections and suppurative processes; (2) malignant processes.

It is far from possible to claim that hematologic distinctions exist between these affections and their subdivisions, but the value of the science lies in the generalizations of which it admits, and its application as a measure of differential diagnosis.

We may lay down the general rule that in the acute febrile affections (including under this head the various infectious diseases and acute suppurating processes) there exists a leucocytosis. It is the exceptions to this that assist us in a differential diagnosis. We may lay down a second broad rule governing the infectious fevers, *viz.*, that in addition to a leucocytosis there is to be noticed either no increase, a diminution, or an absence of eosinophil cells at the height of the fever, the exceptions to this rule being scarlet fever, malaria, and tetanus. Acute suppurative processes, wherever they may exist, adhere quite closely to the rule of existing leucocytosis, and we may often find it of service to know that we are dealing with a pleurisy or meningitis of purulent type, or an abscess of the liver. The infectious fevers display greater deviations, and we shall take up the important ones individually.

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[1] Read by invitation before the Milwaukee Medical Society, June 23, 1896.

Croupous Pneumonia.—Leucocytosis is very marked and confined largely to the polynuclear elements. The greater the leucocytosis, the better the prognosis, and, *vice versa*, the fewer the leucocytes, the worse the prognosis. A long-continued, high degree of leucocytosis is, however, unfavorable, being suggestive of a complication, such as general sepsis. Ewing[2] says that, out of 101 cases, "not one case recovered in which the disease was of even moderate severity when the number of leucocytes fell below 14,000," and A. H. Smith of New York corroborated this observation in an address on "Prognosis in Pneumonia," delivered at the recent meeting of the Association of American Physicians, in Washington. Cases of excessive leucocytosis gave an unfavorable prognosis, being due to septic conditions, in one case to an empyema. This leucocytosis is confined to the neutrophil cells, for the eosinophil cells are diminished or absent, reappearing immediately before, during, or after the crisis. They may, therefore, if appearing before the crisis, be a means of predicting this event; after the crisis, the number of the leucocytes becomes normal—often critically with the fever. A pseudo-crisis is not attended by a diminution of leucocytes or a reappearance of eosinophils.

Typhoid Fever.—Opposed to the positive blood-picture of pneumonia, typhoid interests us because of its negative sides. Here we find a uniform diminution of the white corpuscular elements, a leucopenia (dearth of white corpuscles) affecting principally the polynuclear elements. Their number may be as low as 1500 or 1700, in place of the normal 7000 or 9000, their reappearance following the return of the normal temperature. We are frequently confronted with the perplexing question: Are we dealing with a central pneumonia or a typhoid fever? Let these points, then, come to our assistance: Examination of the blood for its leucocytes (including eosinophils) and its fibrin (increased in pneumonia), the sputum for its eosinophils (absent in pneumonia), the urine for its chlorids (diminished in pneumonia), and for the diazo-reaction (very often present in typhoid). A combination of the affections—typhoid and pneumonia—will, of course, give us a mixed, hence, atypical picture. So uniformly is leucopenia present in typhoid fever that a leucocytosis in the course of the disease should always be regarded with great suspicion. Widal's method, based on the looping of bacilli observable in the blood of a typhoid patient, gives promise of an absolute diagnosis of typhoid.

Acute miliary Tuberculosis.—There is no characteristic blood-picture here that gives us any assistance, and alas! we are not brought nearer a solution of the difficult problem of the differential diagnosis between miliary tuberculosis and typhoid fever. It has been thought that the diminution of leucocytes in typhoid and the absence of this in miliary tuberculosis would be of assistance. In some cases this has been found serviceable, and more recent reports show that there is no constancy in the hematology of miliary tuberculosis. Two carefully observed cases[3] reported by Warthin of Ann Arbor showed a constant diminution of leucocytes, and thus we find ourselves as much at sea as before, and more likely to be misled than aided if arguing from the constancy of the hemal condition in typhoid.

Pulmonary Tuberculosis shows a leucocytosis only in the ulcerative form, and we are, by reason of this, justified in diagnosticating a cavity-formation, even though the physical signs be absent, providing there be no other chronic suppurative or exudative process.

Meningitis, tubercular and purulent.—Purulent meningitis usually has an evident cause—trauma, aural or nasal disease, etc. When we consider the number of cases of chronic otitis media that actually exist, we must say that meningitis from this source is comparatively infrequent; and yet, tubercular meningitis may attack an individual suffering from chronic otitis media, and thus obscure the diagnosis. I have seen two such cases in which eminent clinicians were baffled. Unfortunately, the blood is not of so great an assistance here, for there is no constancy in the leucocytosis. But in purulent meningitis it is of the utmost importance. An interesting case, occurring in Vienna, has been reported by Singer.[4] A patient with otorrhea of many years' standing was suddenly seized with fever and symptoms strongly suggestive of meningitis. The existence of a leucopenia cast suspicion upon the case, and later the discovery of the typhoid bacillus in the urine cleared the diagnosis and prevented operative intervention, to which the patient would have been submitted if the diagnosis of meningitis had been made.

The constancy of the leucopenia in typhoid and non-existence in tubercular meningitis may frequently be of material assistance in diagnosis.

Scarlet Fever.—Of the exanthematous fevers, this shows the most marked blood-changes, a pronounced leucocytosis being found several days before the appearance of the eruption. The polynuclear cells predominate (constituting nearly ninety per cent. of all, and eosinophils are also in large excess, both relatively and absolutely, their excess being looked upon as prognostically good. During the predominance of the catarrhal symptoms in the preëruptive stage, when an absolute diagnosis from measles is impossible, or at best very doubtful, this hematological condition may serve to discriminate between the two diseases. In measles, there is no appreciable leucocytotic alteration of the blood. The same may be said of malaria (in its acute form), typhus, influenza, and, as has already been mentioned, tubercular meningitis.

Malaria and Sepsis.—Absence of a leucocytosis and of eosinophil cells in malaria may, when there are no typical chills, be of service in differentiation from sepsis.

Diphtheria shows quite a marked increase of leucocytes, and erysipelas resembles pneumonia in a critical decline of its leucocytes. Osteomyelitis is also characterized by a marked leucocytosis.

It will be noticed that the distinctly pathologic hemal conditions are largely limited to those infectious processes that are characterized in part by inflammatory exudations.[5]

Bremer[6] of St. Louis claims to have found with the use of a specially prepared eosin-methylblue stain a characteristic pigmentation of the red corpuscle in fifty cases of diabetes. This awaits corroboration.

Secondary Anemia offers nothing characteristic, and is found associated with a large number of chronic affections, such as lues, nephritis, rachitis, malignant tumors, bone-affections, uratic diathesis, etc.

Malignant new Growths.—We may make the general statement that, in addition to the secondary anemia, these conditions incline to a leucocytosis. A very malignant sarcoma may develop an enormous degree of leucocytosis. An ulcerating tumor is especially prone to give rise to a leucocytosis, and this rule is of much practical importance, serving as an excellent guide to the operability of a concealed tumor, such as a carcinoma of the stomach, but a marked leucocytosis is a contraindication to operation. A mild degree of leucocytosis is usually present in any case, and is thus, if in combination with other dubious symptoms, of early diagnostic value. When there is associated with gastric cancer an atrophy of the gastric glandular apparatus, the secondary anemia may be so great as to constitute a pernicious anemia. The experimental fact recently corroborated by Paul Meyer[7] that the ingestion of nuclein normally causes a leucocytosis has also been made use of in the diagnosis of carcinoma ventriculi, for, owing to deficient absorptive powers, a leucocytosis does not here follow the ingestion of nuclein. We may also cite the fact that the digestive leucocytosis, which, in normal individuals, may be estimated as high as 20,000 white corpuscles, is also frequently absent in gastric carcinoma, though, as very recently pointed out by Hassman of Vienna,[8] digestion leucocytosis as a diagnostic symptom in carcinoma ventriculi, is of value only if it is coexistent with an absence of peptonizing power, *i. e.*, the difference between the digestion-leucocytosis in ulcus and carcinoma is to be sought in the concomitant anatomical changes of the gastric mucous membrane, these usually being severe in carcinoma and mild in ulcus.

Parasitization with *Bothriocephalus latus*, severe lues, exhaustive hematemesis, and carcinoma cachexia may present the picture of a pernicious anemia.

To sum up, then, let us make the following generalization: With the exceptions as noted, and with definite limitations, an examination of the blood may assist in the differential diagnosis of:

Typhoid fever and pneumonia; typhoid fever and tubercular meningitis; typhoid fever and typhus fever; tubercular and purulent meningitis; scarlet fever and measles; scarlet fever and diphtheria; malaria and sepsis; carcinoma, ulcerating and non-ulcerating; purulent and serous deposits.

These considerations are meant rather in the light of diagnostic possibilities based on our present limited knowledge of the subject, and I have therefore attempted to treat this subject conservatively. My sole desire has been to stimulate observation and investigation on the part of the individual, by presenting evidence to show that hematology embraces a broad field, not limited to rare blood-affections, nor restricted in practical application to the scientist and his laboratory, and that there are diseases daily passing under the eyes of practitioners in which an examination of the blood may prove a serviceable procedure, adding not only to the symptomatology of the disease, but aiding in the diagnosis.

BIBLIOGRAPHY.

[1] *Wiener klinische Wochenschrift*, September 27, 1894.

[2] *New York Medical Journal*, December 16, 1893.

[3] MEDICAL NEWS, January 25, 1896.

[4] *La Semaine Médicale*, May 13, 1896.

[5] In *La Semaine Médicale* of June 17, 1896, Darier reports a case of dermatitis herpetiformis (Duhring's disease) in which the leucocytes of the vesicles were eosinophilous to the extent of thirty to fifty per cent.; and Leredde, who first called attention to this peculiarity, says that this increase of eosinophils in the blood is present in dermatitis herpetiformis only.

[6] *New York Medical Journal*, March 7, 1896.

[7] *Deutsche medicinische Wochenschrift*, March 19, 1896.

[8] *Wiener klinische Wochenschrift*, April 23, 1896.

New Jersey's Sanitary Commission. — An important meeting of this commission occurred at Lakewood recently at which many details relating to unsanitary conditions in the numerous factories of the State were discussed. An effort will be made this winter to pass such legislative measures as will in a large degree correct these defects.

HYSTERICAL FEVER.

BY W. GILMAN THOMPSON, M.D.,
OF NEW YORK.

IN the MEDICAL NEWS of December 19, 1896, page 700, is reported a case of "hysterical fever," in which the temperature (rectal) was 112° F. (44.4° C.). Dr. Alexander Smith, in exhibiting the patient during a clinical lecture, gives credence to the possibility of the existence of much higher temperatures, and refers to "a case reported by a gentleman of high authority, in which the temperature of a male patient rose to 122° F." (50° C.), and to another case reported at a meeting of the Association of American Physicians, in which the temperature was said to reach 148° F. [*sic*] (64.4° C.). Dr. Smith adds: "In each of these cases there was an hysterical element." I do not deny the existence of a possible temperature of 112° F. in anyone, but it is to be regretted that further publicity should be given to the report of the alleged phenomenon of much higher temperatures than this, which is as definitely controverted by the established facts of physiology as have been the assertions that air at 450° F. (232.22° C.) could be drawn into the depths of the lungs, or that inhalation of pure oxygen gas would cause convulsions by rapid oxidation of all the body tissues!

Many cases similar to the one reported by Dr. Smith have been recorded, and, as he says, the majority of them have been in hysterical subjects or, I may add, in malingerers. Recovery from a temperature of 112° F. is quite possible in insolation. I have seen three such cases. The forthcoming annual report of the Presbyterian Hospital, New York, will contain the records of several similar cases, and of one in which the temperature rose to 115° F. (46.11° C.), the patient recovering. During the unprecedented heat of last summer (1896), I am told that a patient suffering from sunstroke was received at the New York Hospital, who lived for three days after having had a body temperature of 117° F. (47.22° C.). All such cases are attended by phenomena too well known to necessitate detailed repetition here. Coma, convulsions, Cheyne-Stokes respiration, pulmonary edema, and suppression of urine endanger the patient's life, and such temperatures can only be supported for a very few hours at most without proving fatal.

In the article on "Tetanus," in the *American System of Medicine*, vol. i, p. 939, Stewart says that temperatures of 112, 113, and 114° F. (44.4, 45, 45.55° C.) have been recorded.

The type of patient to whom Dr. Smith's communication refers, however, is usually in fairly good general health, and is ready to repeat the temperature phenomenon on the slightest provocation. I have seen a number of such cases where the temperature habit has been very cleverly assumed. The 148° F. (64.4° C.) patient described by a writer in the "Transactions" of the Association of American Physicians (1895, vol. x, p. 159) is an arrant knave and malingerer. I identified him as an old acquaintance, for I turned him out of the Presbyterian Hospital when I found his temperature normal, after I took it myself in the mouth a few minutes after the nurse, in great alarm, had reported it as 109° F. (42.77° C.). He also had "hysterical," or, rather, malingerer's breathing, which disappeared at once when I accused him of being a "fake." Three or four days later I happened to see him in the Surgical Division of the New York Hospital, where trephining him for supposed cerebral abscess had been seriously discussed (!), and where he again exhibited very high thermometric records. He was much surprised and disgusted at being detected again, and I did not have time to urge his dismissal, for he left at once. A member of my house staff identified him also as a patient who had exhibited his "hyperthermy" in one of the Philadelphia hospitals, a year or two before. How he performed his trick, I could not learn, but there was a very definite relation between the height of his temperature and the interest displayed in his case. Anyone who has had playing cards "forced" upon him by a clever prestidigitateur must be able to conceive ways in which the thermometer may be tampered with. It is certainly not done by pressure or friction, for this experiment has been often tried, and without success. It is done by sliding the scale in some manner. It should be borne in mind that the only ready-made thermometers possessing a self-recording "index" are those commonly sold as clinical thermometers, and they usually do not register above 110° F. (43.33° C.) on the scale, with room for 1° or 1½° beyond. The only other thermometers suitable for rectal use which I have been able to purchase ready-made after extensive search are those employed by the beer-brewers, and those made in Europe for thermostats, etc. These thermometers have small bulbs, but large stems; they are without indices, and when tipped a very little below the horizontal line, the mercury can often be made to slide along the scale without application of any other force. On page 182 of the "Transactions," the record of 148° F. (64.4° C.) is given with the significant remark: "Thermometer introduced by patient and removed by nurse." This observation was repeated with the same result (page 183). Many other observations were made by the physicians with the patient "standing up out of bed,"—an admirable position to favor the sliding of the mercury.

When this patient exhibited his 148° F. temperature, his pulse was only 68, but when he had only 112.6° F. (44.47° C. at his disposal, his pulse happened to be 84. His malingerer's breathing fluctuated similarly. When I saw him it was 70, but he could not raise the mercury in the clinical thermometer above named while I kept it vertical and between my own fingers. The character of this patient is exemplified in another statement made in his history, on page 165 (*loc. cit.*), in which he is said to have injured his head in falling from the "walking-beam" of the steamship "Heligoland," plying between Hamburg and New York, in 1892; whereas the facts are that this steamship never had a "walking-beam," and these structures have been out of date upon transatlantic steamers since the days of the "Scotia," many years prior to that time. At the New York Hospital, I found the man had been entertaining the nurses by his exceedingly clever sleight-of-hand tricks—taking oranges from beneath their aprons, and swallowing rolls of bandages and whole bottlesful of medicine, to the consternation of all beholders.

The absurd fluctuations in this man's temperature show how little control he really had over the instrument, for in one of the instances reported (page 180, *loc. cit.*) the record dropped 15.8° F. in five minutes. (The highest temperatures in sunstroke cases cannot be reduced faster than 1° F. in three or four minutes with safety.)

I recall a similar case of a young woman, although with a less ambitious temperature record. This patient's history was reported by Dr. Peabody [1] as a record-breaker. Dr. Peabody spent much time in trying to detect her trick. She appeared afterward at the Presbyterian Hospital, where I identified her and discharged her, after she had been under observation for some weeks and had been examined for possible splenic or subdiaphragmatic abscess. She admitted her deception. She was usually content with a record of 108 to 110° F., but this she maintained at intervals for many months.

There is no doubt whatever that the majority of these so-called "hysterical fever" cases are not hysterical at all in the sense of being in any way controlled by a hypersensitive condition of the heat-centers of the nervous system. An hysterical condition may lead the patient to deceive in this matter, as in many others, but it is safe to assert that all human-body temperatures above 117° F. (47.22° C.) are instantly incompatible with life, and the records of them are only obtained through wilful deception on the part of the patient. There is just one way to prove the genuineness of any such temperature with absolute certainty, and it is so simple that it is remarkable that it is uniformly neglected in such cases. It is to take the temperature of the urine the instant it is voided, with a thermometer which is never allowed to come in contact with the patient's body in any manner. This will give the deep internal body-temperature in the most accurate manner possible. I have often taken the temperature in this manner, and also in women, by passing a long-stemmed thermometer into the bladder, and the record always gives the proper deep internal body-temperature.

In proof of these assertions are innumerable physiological data, as well as the records of clinical experience. The distinguished authority upon physiological chemistry, Halliburton,[2] says: "By fractional heat coagulation, five proteids can be separated in muscle plasma. Four of these are precipitated by various temperatures, and one, of the nature of an albumose, is not precipitable by heat." The three globulins which are thus coagulated by the lowest temperatures are:[3] (1) Paramyosinogen (musculin), which coagulates at 116.6° F. (47° C.); (2) myosinogen, which coagulates at 132.8° F. (56° C.), and (3) myoglobulin, which coagulates at 145.4° F. (63° C.).

A. Sheridan Lea, author of "The Chemical Basis of the Animal Body," in Foster's "Physiology,"[4] gives identical figures.

Kühne [5] also reports an albuminate in muscle that coagulates at 116.6° F. (47° C.)

Landois and Stirling [6] state that "the rapidity of coagulation [in muscle plasma] increases rapidly as the temperature rises, while coagulation takes place very rapidly at 104° F. (40° C.) in cold-blooded animals, or at 118.4 F. to 122° F. (48 to 50° C.) in warm-blooded animals.

I have confirmed this latter observation by experiments upon pigeons, which become rigid and die when their body temperature is artificially raised to this degree.

Speaking of myosin, Foster [7] says: "It is worthy of notice that it coagulates at a comparatively low temperature, *viz.*, at about 132.8° F. (56° C.)."

Turning now to the blood, one finds a similar incompatibility of life with high body temperatures. Halliburton [8] describes cell globulins of the blood, one of which coagulates at 118.4 to 122° F. (48 to 50° C.). Lea [9] says that fibrinogen coagulates at 131 to 132.8° F. (55 to 56° C.) as it occurs in blood plasma, and Halliburton [10] states that "with a solution of fibrinogen and serum-globulin, a temperature of 132.8° F. (56° C.) is employed to precipitate the fibrinogen."

It is thus very evident that with a body-temperature of above 117° F. (47.22° C.), not only would all the muscles be in a state of heat-rigor, and the heart-muscle stiff with coagulation, but some, if not all, of the coagulable proteids of the blood would be coagulated, either making the blood itself semi-solid, or filling it with emboli which would immediately plug all the capillaries. Many of the alleged high body-temperatures reported in medical literature have been insufficiently verified, and have been quoted and requoted without regard to the established simple physiological facts of recent experiment which render it certain that they have had their origin only in clever deceptions practised by the patients. Any such temperature as 148° F. (64.4° C.), or even 122° F. (50° C.), would practically roast the delicate epithelial structures of the body. In a number of experiments which I made some years ago to determine the heat-conveying power of poultices applied to the skin, I found that a temperature in the poultice of 140° F. (60° C.) could scarcely be tolerated, and that for but a short time only. The maximum temperature at which intra-vaginal or rectal injections can be tolerated without discomfort or danger of sloughing should be remembered. A man with a body-temperature of 148° F. would be as stiff as a recent cadaver, and too hot to handle with comfort.

BIBLIOGRAPHY.

[1] *N. Y. Med. Record*, 1895.

[2] "Text-book of Chemical Physiology and Pathology," 1891, p. 412.

[3] *Loc. cit.*, pp. 119, 414.

[4] MacMillan's ed. of Foster, 1893, vol. v, p. 31.

[5] Landois and Stirling's Physiology, Blakiston's ed., 1889, p. 512.

[6] *Loc. cit.*, p. 512.

[7] Foster's Physiology, Lea's ed., 1895, p. 84.

[8] Proc. Royal Soc., vol. xliv., 1888, p. 255, and *Jrn. Physiol.*, vol. ix., 1888, p. 235.

[9] *Loc. cit.*, p. 29.

[10] Text-book cited, pp. 119, 414.

CLINICAL MEMORANDUM.

CONGENITAL ABSENCE OF BOTH PATELLÆ.[1]

BY A. T. BRISTOW, M.D.,
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WHEN my attention was directed to this curious deformity by the following case, I at once made a study of the literature at my command, in the hope of obtaining information regarding it. In the last edition of Quain's "Anatomy," in which special attention is given to anomalies, no mention of the subject was to be found, but a review of the literature of the last few years yielded better results, and I found four similar cases reported.[2] Hartigan gives an account of one case, Körte, quoted by Hartigan, reports two cases, and Railton[3] one. I have also found a number of cases recorded in which one patella was absent, and one curious case in which the patellæ lay in the popliteal space. My case, therefore, as far as I have been able to ascertain, makes the fifth on record of absence of both patellæ.

During the summer of 1895, there came into my service at the Long Island Hospital this child of two and one-half years of age, with a slight pes varus of the right side, and a severe type of the deformity on the left, which evidently called for operative interference. While examining the child for the purpose of correction, my attention was attracted to the case with which a luxation of the knee was produced. Indeed, at first the peculiar crack, with which the dislocation occurred, most unpleasantly suggested a fracture. Closer inspection revealed the fact, however, that the knee-joint on each side immediately became dislocated on bringing the axes of the femur and tibia into line, and that the bones could be displaced in any direction almost at will.

As the joint looked peculiarly prominent, I examined the condyles, and failed to find a patella on either side. The tendon of the quadriceps, instead of being thick and strong, was very thin, and was spread out over the front of the joint, seeming to be attached in part to the condyles of the femur, as well as to the fibula and tibia. There had been no attempt on the part of nature to supply a patella. There have been cases reported where this bone consisted of a rudimentary cartilage, but there was nothing of the sort to be found by palpation in this case.

The most complete account of the cases reported up to this date may be found in Hartigan's article, before referred to. The first case which he mentions was a unilateral defect on the left side, and, curiously enough, most of the unilateral cases seem to have occurred on the left side. In his case the left leg, instead of being flexed by the action of the hamstring-tendon, could not be moved backward after the axis of the leg coincided with that of the femur, but at the child's volition, or with the gentlest pressure, it could be bent forward against the quadriceps, so that the sole of the foot looked upward, with the toes in the groin, in which position the limb was usually maintained. There were two deep creases in the integument anteriorly when the limb was straight, but absolutely no indication of a patella. The writer remarks that the backward displacement of the tibia occurred in uterine life. Other cases referred to are as follows: Chatelain, Neuville, France, 1820, new-born child, left patella absent; Bard, Boston, 1835, absence of patella, dressed with compress under knee, and at three years of age no difference could be noticed in legs; Maas, Berlin, 1874, right patella absent, case did well subsequently; Lane, London, 1858, right patella absent, double pes valgus, subsequent history not given; Labbé, Paris, 1875, child fifteen days old, left patella absent, double pes talus; Caswell, 1865, left patella absent, with malformation of lower limbs; Körte, Germany, 1872, two cases, both patellæ absent; Ammon and Wutzer, 1835, one patella absent.

In all this series of cases there seems to have been an element of spasm, or a contracture of the quadriceps, as it always required more force to bring the limb from its position of extreme anterior flexion backward during the first part of the arc than the last, and much flexion of the

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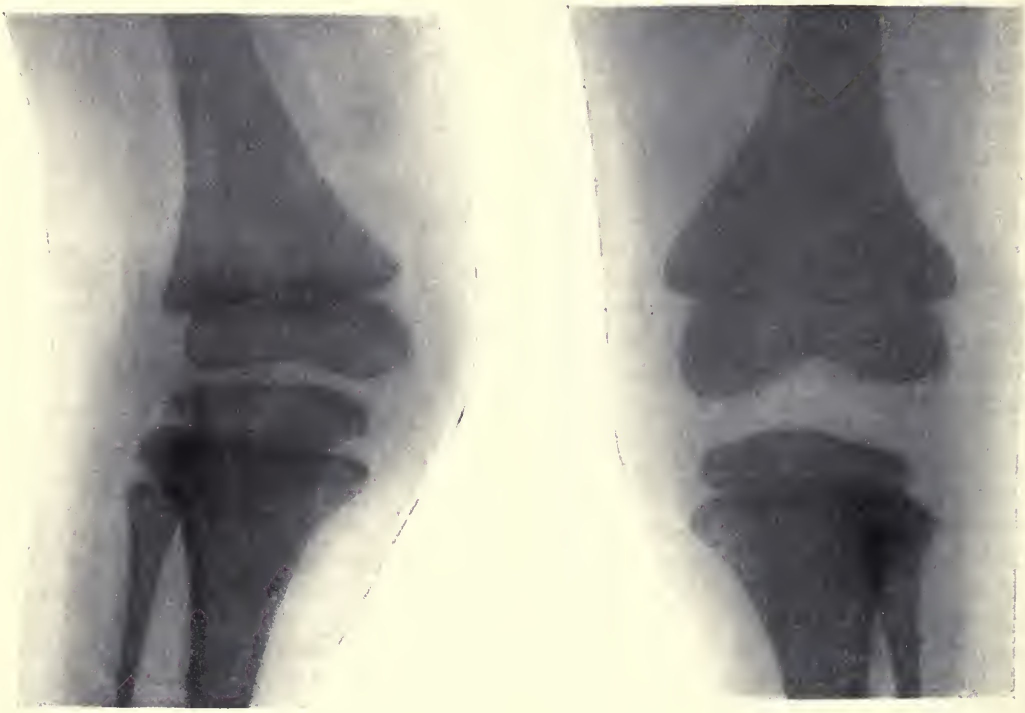
[1] Read before the Brooklyn Surgical Society.

[2] *Nat. Med. Review*, 1879, vol. i, p. 92.

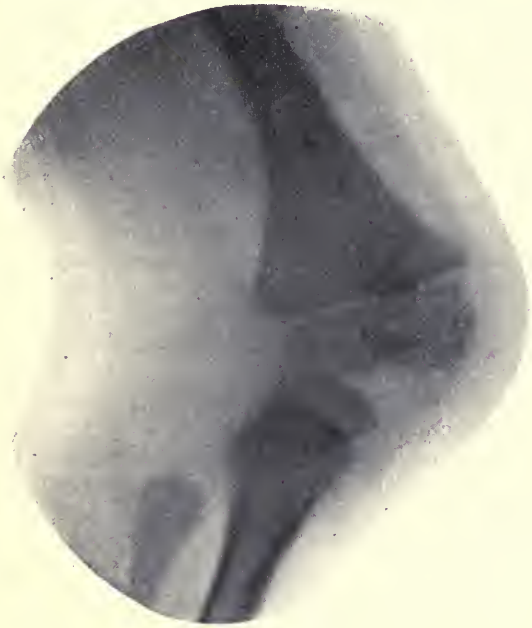
[3] *Brit. Med. Jour.*, 1892.

Fig. I.



Right knee-joint. Left knee-joint.

Fig. 2.



Left knee-joint, side view.

limb, or lateral motion, was painful. Bourquet[1] gives an account of a most interesting case, in which the patellæ were not entirely absent, mere vestiges of the bones being found applied to the external condyles. The patient was a man aged twenty-one, who was exempt from military duty on account of a contracture of the right biceps, which did not permit the arm to be extended to more than a right angle. He was a bailiff's officer, for which, indeed, nature evidently intended him, and was in the habit of walking, so the reporter says, from thirty to forty kilometers daily. His lower limbs were very muscular, the thighs shaped like a woman's, with slight genu valgum. He is said to have walked naturally and to have used his legs as if no congenital defect was present. The tendon of the quadriceps was absent, and with regard to the very rudimentary patellæ, the observer remarks that it was impossible to discover them on ordinary palpation. Railton[1] reports a case of congenital absence of both patellæ in a girl of nine months. There was a slight genu valgum on the left side, and a tendency to varus in the left foot. The left hip- and knee-joints, particularly the latter, were so lax that the left foot could be turned around so as to point directly backward. The right knee could not be so treated. The child was otherwise healthy, except for a mild rachitis.

In reviewing these cases, it will be seen that in some there seems to have been a nervous element present as a factor in producing the accompanying peculiar deformity in these patients; but it is possible that this was reflex and in the direction of protecting the joint, for the synovial surface would be most exposed in extreme flexion, and best protected in anterior flexion. All the cases, without exception, seem to have been subject to other developmental errors, a rule to which this case of my own is no exception, as he has a varus of both sides, it being most severe on the right.

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[1] Bull. et Mem. Soc. de Chir. de Paris, 1885.

[1] Clinical Society of South Manchester, April 26, 1892.

The accompanying skiagrams which very clearly demonstrate the osseous defects, have been procured since the case was reported. I am indebted to Professor W. C. Peckham of the Adelphi College, Brooklyn, for them. They were made with a Thompson focusing tube, and Ruhmkorff coil, eight-inch spark, exposure twenty minutes. Fig. I. shows both extremities, taken on the same negative. The tibia on the right side is dislocated outward and backward with a rotation of the femur inward and tibia outward. The bones are much more closely approximated in this limb than on the left side, as is evidenced by the skiagram. The epiphyseal lines are all clearly seen, the child being three years of age at the time this skiagram was taken. The intercondyloid notch on the left side seems much more marked than on the right, and the profile of the tibial joint-line is more curved.

Plate II. is a side view of the left leg, exposure same as before.

MEDICAL PROGRESS.

A Long Pregnancy.—ROSS reports in the *Australian Med. Gazette*, April 20, 1896, a pregnancy of extraordinary length. On September 30, 1895, the patient, a multipara, thought she detected fetal movements. One week later, October 6, she called upon Ross to have her suspicion of pregnancy confirmed. He felt the movements distinctly at that time, and every week thereafter until the day of delivery, May 20, 1896, *i.e.*, 227 days after he first felt fetal movements. Presuming that they can be felt as early as the end of the third month, it would be necessary to add eighty-four days, making 311 days for the duration of the pregnancy. The condition of the child at delivery coincided with these figures. After a long labor, the os was dilated, the very thick membranes were ruptured, and a female child weighing about nine or ten pounds was delivered with high forceps. Liquor amnii was scanty, and the placenta adherent. The posterior fontanel was completely closed, and the anterior one small and firm, and non-pulsating. The appearance of the child indicated a greater age than 311 days, which is the very shortest conceivable duration of this pregnancy.

Nephritis Due to Hereditary Syphilis.—According to the opinion of AUDEOUD (*Revue Médicale de la Suisse Romande*, August 20, 1896, p. 393) renal alterations may be present from birth in cases of hereditary syphilis, perhaps oftener than is currently believed. The lesion may appear in the form of gummata, of acute parenchymatous nephritis, interstitial nephritis, or amyloid degeneration. These lesions may be manifested during life by the usual symptoms of nephritis-anasarca, albuminuria, anuria, vomiting, and uremic convulsions, and may lead to a fatal termination. It is important to recognize early the etiology of the cases, in order to institute appropriate treatment promptly and effect a permanent cure.

Hepatocele in a New-born Infant, with a Successful Operation.—PATRY (*Revue Médicale de la Suisse Romande*, 1896, No. 7, p. 354) has reported the case of a new-born infant of well-formed parents, who presented in the median line of the abdomen, between the ensiform cartilage and the symphysis pubis, a roundish, slightly bosselated tumor of pinkish tint, about as large as an orange, and sharply circumscribed in outline. The mass was covered by thin, semitransparent membrane, continuous at the periphery with the umbilical cord, which arose from the lower portion of the tumor. Upon palpation, the prominence was resistant, and not fluctuating, and appeared of homogeneous consistence; it yielded a dull note on percussion. The mass was readily reducible, but returned when the taxis was removed. The usual area of hepatic percussion-dullness was wanting. The condition was recognized as one of defective closure of the abdominal walls, with ectopia of the liver. A radical operation was proposed and undertaken on the third day, with ultimate success. Jaundice, lasting for six days, developed, and a small hernial protrusion remained. The latter manifested itself only when the child cried or coughed, and was easily controlled by means of a bandage.

The Influence of Fever Upon Metabolism and Upon Thermogenesis.—As the outcome of an experimental study of the influence of fever upon intra-organic chemic changes, and upon thermogenesis, KAUFMANN (*Compt. rend. hebd. des Séances de la Soc. de Biologie*, 1896, No. 25, p. 773) has determined that the febrile state is attended with an increase in the respiratory interchange, in the excretion of urea, and in thermogenesis. In the febrile starving animal the intra-organic chemic phenomena are simply exaggerated, but they are not modified in their nature. The respiratory coefficient remains nearly normal, and the production of heat in excess is about proportional to the excess of oxygen absorbed. The totality of heat generated may be related to simple oxidation-processes, as a result of which albumin and fat are transformed into sugar, and sugar into carbonic-acid and water. According to results already obtained, the rectal temperature and thermogenesis do not display the same modifications. As a result, the thermometer may not furnish an exact index of intra-organic chemic activity, or of the production of heat during fever. During the febrile state, thermogenesis is increased more in the liver than elsewhere. This fact is in accord with previous observations upon febrile rabbits with differential thermometry.

Hypodermic Injections of Serum in Cholera Infantum.—The *Gazette Hebdomadaire de Medicine et de Chirurgie* quotes Reinach of Munich, as having had a successful result in the therapy above indicated. Reinach had fifteen cases of cholera infantum in which he employed subcutaneous injections of cow's serum in doses of from 10 to 20 cubic centimeters. Four of the patients died; two had a concomitant broncho-pneumonia, and two had a follicular gastro-enteritis of long standing. The effect of the injections manifested itself ordinarily in from six to eight hours after the administration of serum, and from that time the temperature gradually rose, the extremities became warm, the cyanosis gave place to a rosy tint of the skin, and the diarrhea was arrested. This condition generally continued on the following day, and recovery usually occurred after one injection only. In some cases, however, a second injection was necessary in order to maintain the good results which were obtained by the first one. Besides these injections, rice water was given. The author states that, from a nutritive point of view, twenty cubic centimeters of assimilable serum are equivalent to five ounces of cow's milk, or to an ounce and a half of the mother's milk.

Muscular Wry-neck.—KADER has had opportunity to study thirty-four cases of muscular wry-neck, and the results of that study, as published in the *Beiträge z. klin. Chir.*, vol. xvii, p. 207, form an instructive chapter in our still imperfect knowledge of this peculiar disease. In twenty-one cases the sterno-mastoid muscle was removed and microscopically examined. From these investigations, Kader concludes:

1. In muscular wry-neck, there exists an interstitial fibrous myositis of the sterno-mastoid muscle.
2. This myositis consists in excessive growth of the connective tissue of the muscle and degeneration of the muscular parenchyma, its place being taken by newly formed connective tissue, so that not only is the stroma thickened, but large patches are found which are partially or wholly connective tissue.
3. The myositis may affect the whole muscle or only a part of it.
4. The myositis has a chronic, progressive course, although its onset is marked by a more acute character.
5. The transformation of the newly formed granulation-tissue into old cicatricial tissue produces the contraction-atrophy and rigidity of the sterno-mastoid.
6. Other muscles besides the sterno-mastoid may be affected. If so, the same process takes place in them.
7. The alterations sometimes observed in the nerves are secondary to those of the muscles, and are to be looked upon as caused by the extension to the nerves of the inflammation going on in the muscle.

THERAPEUTIC NOTES.

Intestinal Antisepsis.—BOUCHARD recommends the following combination in cases of gastric and intestinal putrefaction, the diarrhea of typhoid, in poisoning by foods, and in dysentery:

℞ Finely pulv. β. naphthol . 15 grm. (ʒ iii, gr. xlv.)
Salicylate of bismuth . 7 grm. 50. (ʒ i, gr. l.)
Divide into thirty powders. S. from 3 to 10 a day.

Nocturnal Incontinence cured by Massage.—In the *Gazette Medicale de Paris*, October 17, 1896, BESTCHINSKY of Russia speaks of the efficacy of massage in nocturnal incontinence of urine, as follows:

The patient empties his bladder, then the bowels are well moved by means of an injection; he is then placed on his back, the legs flexed. The physician then puts his index-finger in the rectum and applies it obliquely against the neck of the bladder, thus producing a slight massage in the direction of the pubes. The other hand is applied externally against the finger already in the rectum, in order that too great a pressure may not be made on the rectal wall. In this manner the massage is kept up for two or three minutes, then the patient reposes a little, after which the massage is resumed. One *seance* a day of from five to eight minutes' duration is enough.

In the cases so treated by Bestchinsky the incontinence diminished after ten *seances;* instead of appearing every night, it was reduced to twice a week, and after twenty applications the incontinence ceased entirely. The author recommends this treatment only in those cases where incontinence is the one symptom. Organic affections producing incontinence are a contra-indication, as are those cases where incontinence is purely a local symptom. The same author also cites an instance where music acted as a valuable therapeutic agent in the treatment of a similar case.

On the Manner of Employing Resorcin in Cutaneous Affections.—HARTZELL gives the following formulas for the use of resorcin in dermatology (*Rev. gén. d. Ther.*, November 8, 1896). In subacute moist eczema a two-per-cent. watery solution of resorcin is alone often sufficient to cure. Its sedative action is, however, increased by the addition of common salt. Thus:

℞	Resorcin	4 parts
	Sodium chlorid	1 part
	Distilled water	200 parts

In erythematous eczema a three-per-cent. watery solution of resorcin, to which glycerin is added (ten drops to the ounce of solution), if lightly applied to the inflamed area several times a day will give relief.

In weeping eczema the following formula is indicated:

℞	Resorcin	1 part
	Dermatol	3 parts
	Glycerin	1 part
	Lime water	50 parts

If the skin is dry a resorcinated paste may be made of:

℞	Resorcin	1 part
	Starch powder	8 parts
	Oxid of zinc	8 parts
	Vaselin	15 parts

In chronic squamous eczema resorcin is not of much use.

In ulcers of the leg, an ointment containing resorcin, two grains to the ounce, is soothing and stimulates granulation.

On account of its lack of color and odor it is especially adapted for use upon the scalp:

℞	Resorcin	1 part
	Alcohol	50 parts
	Vaselin	150 parts

The above ointment is to be rubbed into the scalp at night, and is to be used in cases of seborrhea, daily at first, and then on alternate days.

Under the influence of a plaster containing resorcin, rodent ulcer of the face may completely heal. Such a plaster should contain:

℞	Resorcin	3 parts
	White wax	4 parts
	Powdered resin	4 parts
	Olive oil	q. s.

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SATURDAY, JANUARY 2, 1897.

ALBUMINURIA AS AN EARLY SIGN OF TUBERCULOSIS.

WITHIN the last few years, several clinical observers have claimed that in the early stages of tuberculosis, particularly when the disease involved the lungs, albumin could be found in the urine, and that in obscure cases in which the diagnosis of tubercular infection was doubtful, a urinary examination should be made, with the object of determining whether this additional diagnostic evidence was present. Quite recently Tiessier delivered a lecture in which he endorsed this view and expressed the belief that in these cases the albuminuria depends in no way upon a nephritis, and that it is usually met with in young persons, especially of the male sex. Curiously enough, he went still further, and claimed that it is found only in cases of hereditary tuberculosis, or, to speak more correctly, in those who have a strong predisposition to the development of this malady. In discussing the importance of this symptom and the possibility of its occurrence as a diagnostic factor of value, Saundby asserts his belief that the albuminuria is simply that which is seen so frequently in cases of profound debility, and that as most cases of tuberculosis of a hereditary type are instances of profound debility, the albuminuria has no particular significance.

With this opinion we are inclined to agree, the more so as there seems to be reasonable doubt as to whether the so-called albuminuria of tuberculosis is really an albuminuria, or the albumosuria to which attention has recently been particularly called by Harris of Chicago. This condition is by no means infrequent in nearly all infectious processes, notably in tuberculosis, croupous pneumonia, the various other infectious diseases, and conditions associated with streptococcus-infection: in other words, the albumosuria or albuminuria, whichever it may be, is simply a manifestation of the infection of an individual by some microörganism; and while it is indicative of the development of an infection, it is not indicative of any one particular disease. Whatever, therefore, may be the ultimate value of this symptom in reaching a diagnosis in suspected cases of tuberculosis, at present it cannot be relied upon to any considerable extent.

Further than this, the fact that in the presence of suspected infection no albuminuria is found to be present does not even exclude the possibility of an infection, for in many such cases a careful microscopic examination of the urine, the sediment of which has been obtained by means of the centrifuge, will reveal casts of all forms, although careful chemic examination fails to reveal any albumin whatever. Thus Kössler, in a recent paper quoted by Saundby in the *Birmingham Medical Review*, found all kinds of casts in twenty-nine cases in which no albuminuria existed, although the greater number of the patients were suffering from an acute infective disease.

On the other hand, the presence of casts, according to Kössler, is not to be given too great pathologic significance, for he asserts that subsequent *post-mortem* examinations of the kidneys of some of these patients showed no structural evidences of nephritis whatever. In other words, the value of the urinary examination in cases of infection depends not only upon the finding of casts or albumin, but upon their association.

The well-recognized fact that a diagnosis cannot be made from a single symptom, but only from a number of associated symptoms, is once more emphasized.

A REVOLT AGAINST THE LODGE.

THE physicians of Santa Clara county, California, 124 in number, have associated themselves together and pledged themselves to do no contract work for lodges or other organizations at reduced rates. They estimate that heretofore lodge members have obtained medical service at the rate of about fifteen cents on the dollar.

The action taken by the Santa Clara physicians is in every way commendable, and is worthy of wide imitation. A similar organization should exist in every lodge-ridden community of the civilized world; but it is doubtful if such spirited enthusiasm and unanimity could be aroused in any other section of our broad land. Cliques and factions, combined with selfishness and competition, so distract most medical bodies that, even in the case of most crying evils, unanimous action is well-nigh unknown.

Lodge and other contract medical work is acknowledged by all thinking men to be degrading and demoralizing to both recipient and giver, and like the indiscriminate, gratuitous medical services of dispensaries tends toward the pauperization of both. There is no difference in the two conditions. Medical service given at less than its real value is charity, whether the recipient looks upon it so or not; and charity, unworthily bestowed, begets an unnatural dependence which is on the border of pauperism.

Fully fifty per cent. of the people pay their bills only because they have to, and doctor's bills come in for their full share of procrastination and neglect. The fallacious idea that physicians earn their fees easily incites this debt-shirking class to any and every expedient to get medical advice and treatment for nothing, or next to nothing. This is the sole cause of the fattening of dispensaries and clinics, and the prime *raison d'être* of the lodge. Tenaciously rooted as this conspiracy is, and appealing as it does to the self-interest and base ambitions of a few disloyal physicians, it has come to stay, in our larger communities at least.

For a time the 10,000 residents of Santa Clara Valley must pay regular rates for medical services according to their means. But in all probability it will be for a time only that the sovereign people of this sunlit vale will submit to such presumption on the part of their doctors, for it is safe to predict that before the three years of the pledge expire, the lodges will have all the medical attendants they want. Struggling outside physicians will see in this state of siege a possible, although unenviable, chance for establishment, and will jump not only the county bounds but also the "Standing Committee," appointed to interview newcomers, and, to our shame be it said, some of the signers of this pledge, because of an imaginary or real need, weakness or cupidity, may backslide and join the foe.

There is one remedy, and only one, for these and kindred ills of the medical profession—a remedy neglected because apparently unattainable. We like to flatter ourselves that we belong to a noble and benevolent profession, and may we never forget it; but the sooner we convince ourselves that medical services are, within certain limits, subject to the same law of supply and demand as the trades or manual labor, or even ordinary commodities, the sooner we can apply the remedy. When the crop is light, grain is high; when the crop is bountiful, grain is low and perhaps is fed to hogs, or even used as fuel.

The present annual crop of doctors is certainly bountiful; what wonder then that fees are lowered, lodge and contract tyranny submitted to, and sometimes euthanasia sought as a relief from overcrowding and competition.

For these and most other ills of this kind the doctor has himself to thank; but it is not yet too late for us, by unanimous uprising, to curtail the output of medical colleges, or, better still, to shut up or consolidate about half of them. Many of them exist largely from selfish motives, and it necessarily transpires that many of their graduates are not infused with a high or lasting professional ideal.

What wonder then that some will sell their services cheaply to lodges, some descend to arrant quackery, and others, still, drift into abortion and other lawless practices!

Each physician of Santa Clara Valley must get his living from 565 of population, and therein lies the rub. It is time for him, and every thinking physician, to bestir himself and discourage young men, unless especially fit, from entering the medical profession by telling them truthfully how always laborious and generally unremunerative a physician's life is.

ECHOES AND NEWS.

Lunacy in London.—The number of insane in the city of London is reported to be above 13,000, with an average increase of more than 600 each year.

Jenner Memorial.—A public movement is on foot in London to raise funds to establish some institution in connection with the British Institute of Preventive Medicine as a memorial to Jenner.

The Cullingworth Fund.—The subscription to the fund to reimburse Dr. Cullingworth for the expense he incurred in defending himself in the recent suit for damages are already sufficient to meet the expenditure and no more will be received.

A New French Hospital in Constantinople.—About one hundred years ago a French hospital was founded in Constantinople. It has recently been rebuilt in accordance with the modern idea of sanitation and asepsis, and was formally opened on December 12, 1896.

The King Humbert Hospital.—After three years being occupied in its erection, the Royal Hospital at Monza, Italy, has been formally opened by King Humbert, whose name it bears. It will accommodate nearly three hundred patients and in the detail of its appointments is thoroughly modern and unusually complete.

Valuable Goods in Small Packages.—A Mrs. Donaldson of Camden, N. J., recently gave birth to a perfectly-formed, healthy child which weighed but seven and one-half ounces. Its head could be contained in an ordinary teacup, and its hand covered by a silver 25-cent piece. At last accounts it bade fair to thrive.

Beriberi in Dublin.—The epidemic continues. In all, 113 persons have been attacked. Of these seven have died. The marked symptoms in the majority of the cases are weakened heart action, paresis of the leg muscles, and localized anesthetic patches. A tendency to relapse is a marked feature of the epidemic.

Filmogen.—At the Medical Club of Vienna, Schiff recently described an agent for covering denuded cuticle under the name of Filmogen. This is a solution of nitrous cellulose in aceton, combined with an oleaginous base. It forms a yellowish semi-fluid body, insoluble in water, flexible when dry, and causes no pain to the denuded surface.

Lumbar Puncture in Plumbic Encephalopathy.—Dr. Seegelken, assistant to the Medical Clinic at Jena reports a case of coma due to lead poisoning in which the patient's life was saved by lumbar puncture. About two ounces (60 grams) of cerebro-spinal fluid were withdrawn, after which the patient promptly recovered consciousness, and all symptoms disappeared within thirty-six hours.

The Delirium of Talk.—The *British Medical Journal* directs attention to this prevalent affection. It is said to present its most dangerous phases in the inflammatory oratory of the present day. No class seems wholly free from its influence, while the highest pitch of destructive fury is found among politicians. It is cautiously suggested that the clergy are not unknown among its victims, and even doctors are not wholly excluded.

Meeting of the Western Ophthalmological Association.—The Western Ophthalmological, Otological, Laryngological and Rhinological Association, of which Dr. Adolf Alt of St. Louis, is president, and Dr. Hal Foster of Kansas City, Mo., is secretary, will hold its annual meeting in St. Louis on the second Thursday and Friday of April, 1897. Physicians desiring to read papers are invited to send subjects to the secretary at once. Programs of the proceedings will be issued early in February.

Poison in Cosmetics.—At a recent meeting of hairdressers in Paris, it was stated that the rice-powder, sold largely to ladies as a cosmetic, was by no means so harmless as its name indicated, but contained varying proportions of white lead, chalk-starch, and alabaster. Many years ago, owing to the chemical investigation of the face-powders at that time popular with American ladies, this evil was in a great measure corrected, but it is not at all improbable that it is again a source of danger in America as well as in France.

Hygienic Examination of Schools.—The Board of Health of New York City has received an appropriation of $47,500 for the establishment of a special corps of medical inspectors, whose duty it will be to look after the health of all the children attending the public and parochial schools, and to exercise a supervision over the sanitary conditions of all the school buildings under the jurisdiction of the Board of Education. The system, which will be introduced at the beginning of the year, is already in vogue in London, Paris, and Boston, and has met with encouraging success.

Charges against Dr. E. J. Tucker.—Dr. E. J. Tucker, chief of the medical staff on Randall's Island has been charged with general inefficiency and lack of medical experience, and it is probable that he will shortly be summoned before the Commissioners of Charities and Correction to refute the charges. It is said that he owes his appointment to political influence, that he is a dentist by profession, and that he has not written a medical prescription since assuming the duties of the position. Dr. Tucker claims that the charges have been instigated by a discharged nurse, and that they have no foundation in fact.

Intestinal Absorption and Excretion.—Herr Hoinjmann has recently made some interesting observations in the case of a woman, who, in the healing of an abdominal abscess, had the misfortune to have the colon completely excluded from participation in the process of digestion. The chyme was discharged from a fistula involving the latter part of the ileum. Only four per cent. of fats were discharged, showing that they are absorbed by the upper intestinal surface. Albumin, however, escaped in considerable quantity, as was also true of iron when administered, showing that the colon plays an important part in their assimilation.

The Oyster and Disease.—On December 5th, Dr. Thorne delivered a lecture before the National Health Society in London upon "Oyster-culture in Relation to Disease." In this he stated that the oyster had been definitely proven to be a carrier of the specific microbes of cholera and enteric fever, and in at least one instance the bacillus coli had been found inside the mollusk. It was conclusively shown, he thought, that great danger attended the consumption of oysters fattened in waters contaminated by these and kindred germs, and in future a guarantee to the effect that their beds were free from pollution should be demanded of those engaged in oyster-culture.

Quack-medicine Manslaughter in Dublin.—A most distressing fatality occurred in Dublin ten days ago by which a young clergyman lost his life. It was shown at the inquest that he had suffered from neuralgia, and one of those busybody friends who abound everywhere, undertook to cure him by a nostrum which some one told him that some other person had heard was efficacious in some one else's case. Having procured this stuff he gave it to the servant girl without instruction, written or verbal, as to its use, and she left it on the supper tray where the victim found it and swallowed it, dying within a few minutes from poisoning by the aconite which it contained. In this transaction there is nothing but the familiar elements of the average patient who is stupidly willing to swallow any nostrum that an equally stupid and ignorant friend extols.—*Med. Press and Circ.*

Fire at the New York Polyclinic.—A disastrous fire, which had its origin in an adjoining building, completely gutted the fourth floor of the New York Polyclinic Medical School and Hospital, early on the morning of December 25th last, and placed in imminent danger the lives of some sixty-five patients, all of whom, however, by the active efforts of the nurses, physicians, and members of the police, were removed in safety. The number included some twenty or more children from the orthopedic wards, and several upon whom laparotomy had been performed on the immediately preceding days. No untoward effects of their hasty removal into the bitterly cold air have resulted. The faculty of the Polyclinic immediately arranged for roomy temporary quarters a short distance from the site of the fire, and the regular order of clinics and lectures was resumed before the large class of students on the 30th ultimo.

Twelfth International Medical Congress.—Claudius H. Mastin, M.D. of Mobile, Ala., has been requested, and has consented to serve as one of the members of the American National Committee of the Twelfth International Medical Congress, to be held at Moscow, August 19–26, 1897. The Central (Moscow) Executive Committee consists of the following gentlemen:—President, Professor I. F. Klein; Vice-President, Professor A. J. Kojewnikow; Secretary-General, Professor W. K. Roth; Treasurer, Professor N. F. Filatow; Secretaries, Professor P. I. Diakonow, Professor A. J. Tikhomirow, Professor I. I. Neyding; Members, Professor S. S. Korsakow, Professor J. F. Ognew, Professor W. D. Cherwinsky. It is officially announced that preparations are being made for the reduction of Transatlantic steamer and European railroad fares. A. Jacobi, M.D. of New York, is the Chairman of the American National Committee.

One Solitary Medical College in North Carolina.—Mr. S. P. Stafford, of the class of 1897, medical department, University of Pennsylvania, calls attention to the fact that an error occurs in a recent editorial which appeared in the NEWS in connection with the statement that there is not a single medical school within the confines of the state of North Carolina. He speaks most highly of the Leonard Medical College, located at Raleigh, N. C., and also volunteers the information that it was organized in 1882, that it has a corps of ten professors, and that from sixty to seventy-five students are graduated yearly. While the correction is cheerfully made, and acknowledgments tendered to our correspondent, it is to be regretted that North Carolina must descend from the proud pedestal upon which our imagination had placed her. A city, to say nothing of a State, without half a dozen actively working schools of medicine annually turning out scores of young practitioners to battle unsuccessfully against the dispensary evil, is a *rara avis* deserving of our highest admiration and respect!

Surgeon-General Robert Adair.—The hero of that fine ballad "Robin Adair," was a dashing young Irish surgeon, who, about the middle of the last century, finding his way into London society, was fortunate enough to secure the affections of Lady Caroline Keppel, daughter of William, second Earl of Albemarle, and his wife, Lady Anne Lennox, daughter of Charles, first Duke of Richmond. The match was naturally looked on with disfavor by the family of the young lady, and it was during a period of temporary separation that Lady Caroline is said to have written the words of "Robin Adair," and set them to the old Irish tune of "Eileen Aroon," which she had learned from her lover. At length, however, love triumphed, and the pair were united on February 22, 1758. Within a few days Adair was appointed inspector-general of military hospitals, and, subsequently, becoming a favorite of the king, was made surgeon-general, king's sergeant-surgeon, and surgeon of Chelsea Hospital. He died in 1790.—*Notes and Queries.*

CORRESPONDENCE.

THE FUROR SCRIBENDI.

To the Editor of the MEDICAL NEWS:

DEAR SIR: Your little editorial, "The Furor Scribendi," no doubt stirred a responsive chord in the bosom of many a reader. Are we poor folks to be considered merely a passive machine, a sort of many-mouthed, but voiceless hopper, into which is to be cast a lot of offal? As a matter of fact, the thing is getting unbearable, and I seriously think of taking "arms against a sea of troubles and, by opposing, end them." It must be delightful for the one possessed of the furor scribendi to count off and contemplate in advance the number of blows he can inflict on his poor, suffering, passive victim. For example: I go to a meeting of our State Medical Society and hear a paper read; the paper is good or indifferent, as the case may be. The paper, with its fellows, and the discussion thereon, is printed in the Transactions, bound in a volume, and eventually finds a place on my shelves. So far, so good; no harm is done. I can take up the volume at an idle moment, go over its pages, and feel a thrill run up and down my back whenever my eyes rest on my own name and that of some colleague whose paper I trailed in the dust. Or I can indefinitely dispense with the electric shock, and allow the Transactions to rest and get covered with dust and cobwebs. But I little know the man possessed of a furor scribendi. When the society meeting has fairly retired to some Rumpel-kammer within my skull, I get a reprint (compliments of the writer, Mr. Editor), and that meeting is hauled out from its retirement. A glance at the reprint does the work; I am very impressionable, and surely it would be sacrilege to throw my friend's reprint into the waste-basket without a glance.

After the reprints from the Transactions are exhausted I breathe easy for a while, and regain a feeling of security. But that crowd, Mr. Editor, is sly—devilish sly. All unprepared and innocent, I am jumped upon by all of them at once, and am made to pay for the privilege, too! Upon a preconcerted signal, they invade my medical journals, and I am buried under a mass of that stuff which I have twice shoveled aside. The cold sweat stands in beads on my brow; I sink back speechless, if not exhausted, nearly, if not quite, knocked out. I know they have yet another arrow, another string to their bow—the reprints from the medical press.

Now, if those possessed would give us an inkling when and where the casting-out process is to take place, and would confine themselves to one place and time, we might evade them; as matters are, there is no escape. Like the bacteria, the possessed are ubiquitous, and are fighting "with daggers of lath." I am resigned; I am prepared "rather to bear those ills we have than fly to others that we know not of."

Very truly,

ALFRED F. FUCHS, M.D.

P. S.—Send me reprints! Shall I not have my pound of flesh?

LOYAL, CLARK CO., WIS.
December 19, 1896.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

ORGANIZATION OF THE PHILADELPHIA PEDIATRIC SOCIETY.—MEETING OF THE COUNTY SOCIETY.—A UNIFORM STANDARD OF MEDICAL EDUCATION.—INFLUENCE OF PREGNANCY ON IDIOPATHIC EPILEPSY.—APPENDICITIS.—CHOLECYSTOTOMY.

PHILADELPHIA, December 26, 1896.

In response to a call issued recently about 125 physicians assembled on the evening of December 22d at the College of Physicians to form what is now known as The Philadelphia Pediatric Society. The meeting was duly called to order, and the following officers were elected to serve for the ensuing year: Dr. J. P. Crozer Griffith, president; Dr. E. E. Graham, Dr. A. V. Meigs, and Dr. Frederick A. Packard, vice-presidents; Dr. Alfred Hand, jr., secretary; Dr. C. F. Pettibone, treasurer; Dr. Charles W. Burr, Dr. William B. Atkinson, Dr. Alfred Stengel, Dr. Thompson S. Westcott, and Dr. William C. Hollopeter, executive committee. A Constitution with By-Laws was then adopted, and the second Tuesday of each month appointed as the time for meeting. The objects of the Society, briefly stated, are the exhibition of cases, the verbal or written reports of cases of interest, the exhibition of pathological specimens bearing upon pediatrics, and the presentation of special papers, or the holding of pre-arranged discussions of special subjects,

At a stated meeting of the Philadelphia County Medical Society, held December 23d, the following papers were read and discussed: Dr. Silas Updegrave supplementing a paper read by him May 13, 1896, treated at length of "A Uniform Standard of Medical Education for the Degree of Doctor of Medicine." His suggestions were somewhat radical, and time alone will reveal their practicability. The subject of an exhaustive research by Dr. F. Savary Pearce was "The Protean Influence of Pregnancy on Idiopathic Epilepsy." After consulting the records of a number of hospitals, private institutions, and obtaining a case here and there in private practice, he had compiled a series of some twenty cases illustrating his subject. As a rule the findings were that during pregnancy the seizures, either of *petit mal* or of major epilepsy, were lessened in frequency and violence. One of the cases quoted by Dr. Pearce brought to light a rather peculiar and interesting point. A woman throughout her pregnancy, which had progressed well into the latter half, had had numerous generalized attacks of *grand mal*, lasting for several hours. Labor pains now came on, and the attending physician on examination found a mal-presentation. Version was done with a view of expediting delivery. The pains of labor ceased, however, and the woman went on to full term without the recurrence of a single epileptic seizure. An attempt to explain the total cessation of these attacks after versions involves one as deeply as does the making of a satisfactory hypothesis as to the cause of so-called idiopathic epilepsy, which is itself, as one of the numbers present aptly expressed it, an hypothesis to everyone save the man who has it.

D. Mordecai Price reported a number of interesting cases in abdominal surgery. Speaking of the diagnosis of appendicitis, he divided the signs into two classes, one of which pointed correctly toward the affection named, and the other group, which he called "symptomatic," indicated rather impaction. He said were he called, in consultation, to a case with or without the obtainable history of abdominal injury or overindulgence in eating, a mass suddenly appearing in the right iliac fossa having no tendency to enlarge, pain localized in that area, a temperature of 1, 2, or 3°, his judgment would incline rather to the symptomatic group, and he should advise free purgation, rather than operation. Citing a number of cases to prove his point, he went on to say that he considered the *early* appearance of a lump in these cases rather as a sign of good omen than the opposite. Increase in the size of the mass, a chill, a temperature normal, or below that point, with a pinched expression about a face already anxious, would incline him to the belief that pus was present and that operation was indicated at once. Absolute freedom from fear in the establishment and maintenance of free drainage is essential to success in such cases. Of operations on the gall-bladder, he reviewed a number of cases—one particularly interesting because of its peculiar and tragic termination. A large woman, sixty-five years of age, had had periods of acute suffering covering twenty years, When he was called to see her, he found her jaundiced or, rather, bronzed to a depth of color that only the hypothesis of malignancy complicating impaction could satisfy. Acute, intense pain in the right shoulder and elbow was complained of. Upon operating, he found the gall-bladder enormously distended, out of position, containing large stones almost four inches in length. Several of these were easily removed, the last and longest with the greatest difficulty, after exerting extreme caution. The edges of the gall-bladder were then stitched to the abdominal wall, free drainage established, and the case progressed favorably until the fourth day, when the woman was unexpectedly found dead in bed, deluged with blood. Exploration revealed the fact that one of the large stones had, with its sharp facets, sawed through the abdominal aorta, so weakening it as to cause it to rupture under the circumstances mentioned.

OUR PARIS LETTER.

[From our Special Correspondent.]

THE UNIVERSITY OF PARIS ORGANIZED—FOREIGN DOCTORS IN FRANCE—OPPORTUNITIES OFFERED BY THE PARIS CLINICS—ALCOHOLISM IN FRANCE—JEAN CHARCOT, M.D., MARRIES MME. JEANNE HUGO, ETC.

PARIS, December 1, 1896.

During these last few days decorators have been lettering the various buildings of the medical school with the words: "University of Paris." The legend is the external manifestation of the vital internal development that has led to the union of all the teaching faculties in Paris under one governing body. It was formally acknowledged at the Sorbonne on November 19th, when, in the presence of all the faculties of the university, of all the high officials of France—civil, military, and naval, of the representatives of all the foreign governments, and of all the members of the various academies ('the immortals'), the President of the Republic, inaugurated the University of Paris. The independent examining boards created by Napoleon I. in 1808 have gradually acquired the powers of faculties, and being drawn together by mutual interests, have gained solidarity in their evolution, and this formal inauguration is not a new creation but a legal adoption of the existing state of affairs by the Republican Government.

The law that formulated the new state of affairs has its interest for foreign medical students. Hereafter no foreigner will receive the degree of Doctor of Medicine unless he expresses his intention of practising outside of France. Moreover, as the applications for service in the hospitals, an important part of the medical training for two or three years of the course here, are already too numerous, no foreigner will be granted the privilege of being an interne in Paris, though I believe they may still be received as such by the other faculties of France.

This practically closes the door against foreigners for undergraduate medical studies. The impression has somehow got abroad that this influences the position of those who wish to do post-graduate work, but this seems absolutely without foundation. American doctors particularly, if I may judge from my own experience, and know it is not exceptional, are heartily welcomed. Privileges are accorded for the asking that would be unthought of in America. Doctors may hear all lectures and attend all clinics, accompany any physician or surgeon in his visit to his wards, and take a number of special courses simply on the presentation of some formal evidence to the Dean that he is a regular graduate. He may follow all the ordinary practical courses—dissection, physiology, bacteriology, pathological anatomy, etc., on the payment of one fee—forty francs (less than $8). Besides he may if he shows an interest in certain specialties have the opportunity to see all the clinical material in such immense institutions as *La Salpetriere Becêtre*, for nervous diseases; *St. Louis*, syphilis; or *L'Asile Ste. Anne*, mental diseases. After a while one almost gets the feeling that it is an imposition on good nature, so cordially do the great French clinicians put themselves at one's service. There is but one objection, and that is the distance one has to travel for material. Taking the medical school as a center, *La Salpetriere*, *St. Louis*, *Ste. Anne*, and the Pasteur Institute, are at the ends of four about equidistant radii, and each two miles at least away from the school.

The new University of Paris begins with about 26,000 students, having gained 10,000 students in ten years, about the same rate of increase as at the University of Pennsylvania (considered wonderful with us), only what the latter has gained in hundreds Paris has gained in thousands. Of these, 5144 are medical students, a decrease of over 300 from last year, attributed by the Dean, who officially announced the attendance November 26th, to the regulations regarding foreigners. At present the number of foreign undergraduates is about 900.

There is just now considerable interest in the question of alcoholism here in France, and a decided effort is being made to secure the passage of sumptuary and revenue regulations to regulate the evil. The discussion has brought out very clearly one important fact. It has been the custom to say that the evils usually attributed to alcohol (disease, degeneration, insanity) were not due so much to the amount of the alcohol consumed as to the quality of it. As is often said in America, it is the fusel oil, the paraldehydes, the higher alcohols, and certain poisonous ethers contained in poor whisky that makes its ravages so serious among the poor. Repeated chemical analyses at the Sorbonne of series of liquors selected for the purpose show that these substances are present in quantities so small that practically they may be entirely neglected in the results produced. Joffroy of *L'Asile Ste. Anne*, has published a series of experiments to the same effect, from a biological standpoint. It takes no more of the poorest alcohol obtainable to kill an animal than it does of the very best. The vile-smelling, bad-tasting, often ill-looking alcohol that comes over at the very beginning, or again near the end, of the distillation of a quantity of liquor will kill an animal, when injected, no sooner than the bland, oily alcohol, with its pleasant "bouquet," that comes over in the very heart of the distillation. The experiments have been repeated often enough to give the assurance that the conclusion is correct.

The whirligig of time and one of the freaks of the little love-god have brought about a marriage that has attracted a good deal of attention in medical circles here and in England. Jean Charcot, M.D., the son of the famous Charcot of *La Salpetriere*, married last week Mme. Jeanne Hugo, the granddaughter of Victor Hugo. Mme. Hugo is the divorced wife of M. Leon Daudet, the son of Alphonse Daudet, the writer. It was after his marriage with Mme. Hugo that Leon Daudet wrote his infamous book, "*Les Morticoles*," a satire that is intensely bitter on the medical profession of Paris. He had studied medicine for five years, had failed three times in his examinations for interne of the hospitals, and then took this means of avenging his failure. His father's name, and the love of the Parisians for anything new, especially when it is abusive of existing institutions, gave the book a vogue that it is hard for an American to understand, for it is in a way the recapitulation in a grossly exaggerated form of everything hard that has been said against the medical profession from the beginning.

December 8th.

The sudden death has just been announced of Professsor Strauss, who has occupied the chair of experimental and comparative pathology in the medical school of the University here. Professor Strauss was only fifty-one years of age, and his death comes as a great shock to his colleagues in the faculty. He was one of the men who gathered around Pasteur when that great master was doing his wonderful experimental work and who, having imbibed his teaching and learned his methods, have been able to carry on his work. His observations on glanders, with Roux and Nocard at Alexandria, and with Roux at Marseilles on cholera at the time of the last epidemic, brought him prominently forward. Of late years his experimental work with regard to the contagiousness and heredity of tuberculosis, attracted world-wide attention. His experiments with Gamaleia on the relations between human and avian tuberculosis did a great deal to bring into relief that important and vexed question. Only last year he published his book of one thousand odd pages on "Tuberculosis and its Bacillus." which is the best and most complete study of the subject to date. In 1888 he succeeded to Vulpian's chair in the faculty of Paris. While Vulpian had taught experimental medicine mainly from a physiological standpoint, Strauss saw the direction in which modern scientific medicine was drifting and at once practically made the chair one of bacteriology.

On the first Monday in December of each year, Pinard at the Baudelocque Clinic of Obstetrics, invites all the patients on whom he has performed symphyseotomy to return for examination before the class. It is the best possible demonstration of the after-effects of the operation as regards locomotion, etc. He then gives his statistics for the past year, and any changes in the indications for operation or any modifications of the technic he has seen fit to adopt. So far, Pinard has performed 82 symphyseotomies, with a mortality of 9 mothers and 12 children. None of the mothers died directly from the operation, but usually from some intercurrent disease due to the protracted labor. They are often in labor for days before being brought to the clinic. The children were born dead in all but 4 of the fatal cases, and death was usually due to the same causes as those present in the mothers. During this past year he has operated 14 times, with 2 maternal and no infantile deaths. One of the mothers died on the sixth day from lobar pneumonia, the pneumococcus being found after section; the other died from septicemia. In twelve instances he has done symphyseotomy more than once on the same person. Union of the symphysis has always taken place, and none of the functions of the pelvic joints have been disturbed.

As regards indications for the operation, no changes are to be noted except that as time goes on nature is trusted more and more in contracted pelves, and spontaneous deliveries are patiently awaited. Out of 95 contracted pelves at the clinic during the year, 68 were delivered spontaneously, and in but 14 was symphyseotomy needed. As to technic, the points special to Pinard seem to be: "Never open the symphysis more than 7 cm., not from fear of injury to the sacro-iliac synchondroses, but because it will cause injurious tension on the soft parts. In primaparæ always dilate the vagina with a water-bag before delivering. In extreme contraction version is indicated. No bony sutures are necessary, and if used they may lead to suppuration."

Three of Pinard's great maxims are prominently displayed on a large tablet in his clinic room:

"Embryotomy on a living child is a thing of the past."

"No pregnancy should ever be interrupted prematurely. Infants delivered this way, as a rule, either die within a few days or live, miserable weaklings in mind or body."

"The child has the right to its mother's milk."

Last year at the Baudelocque, there were 2100 labors, with a mortality from all causes of less than one-half per cent.

Last week I was present at a demonstration on the part of the students, who were resolved not to listen to the lectures of one of the assistant professors. Professor Farabœuf is ill, and after some delay Assistant Professor Sebileau was chosen to give the lectures on anatomy in his stead during this semester. Dr. Sebileau has rendered himself obnoxious to the students by the rigor of his examinations, and by having opposed several student-movements last year. His opening sentences were greeted with catcalls, cheers, stamping, and general confusion. Every time he tried to begin his lecture the same performance was repeated. Finally, after twenty minutes' effort to be heard, he sent word to the dean.

Professor Brouardel (the dean), who seems to be quite popular, received a very cordial welcome. He was listened to attentively while he explained that the lectures on anatomy would have to go on. Then he sat down, and Dr. Sebileau attempted to talk, but it was of no use; the crowd at the back of the immense amphitheater and in the doorway would not allow him to be heard. The dean once more interfered and was listened to, but they would have none of Dr. Sebileau. Finally, the dean announced that if the lectures on anatomy were not given this semester there would be no examination in the subject this year. This brought the crowd to its senses, and any attempts at disturbance thereafter were promptly put down by the students themselves, and the lecture proceeded more or less peacefully. Time is precious to the Parisian medical student, and the loss of a half year would be a serious thing. At twenty-six he must have his degree, or else serve his full three years as a soldier like the rest of mankind in France. He is exempted from two years of military service, but on the condition that he be either a practising physician or an interne of one of the hospitals before he is twenty-seven. When between the ages of nineteen and twenty-seven, a young man has to devote one year to military service and five years to medical studies, the missing of an examination means a good deal.

Some recent reports to the Academy of Medicine, to the Society of Biology, and the Hospital's Union seem to show that the injection of artificial serum (normal salt solution) may prove as useful to the physician as it has to the surgeon. It has been tried with excellent results in the gastro-enteritis of children where this is accompanied by exhaustive diarrhea or rapid collapse; in a word, in the choleriform conditions. It has been used in animals in poisoning cases, especially in poisoning by strychnin, with encouraging results. In both classes of cases, the indications that it meets seem to be the depression of nerve-force and the consequent defective elimination. The increased blood pressure seems to lend tone to nerve centers, and hasten elimination this way and mechanically, besides diluting materially toxic substances that are present.

A modification of this artificial serum-therapy has been reported as giving good results in the infectious fevers. It has been tried particularly in pneumonia and typhoid fever. The patient is bled several times in the early stages of the disease, and each time the amount of blood taken is replaced by normal salt solution. Toxins are thus effectively disposed of, yet without materially weakening the patient. The remedy would seem to have a field for usefulness in such states as uremia, chronic and acute lead poisoning, and diabetic coma; in a word, in any condition where symptoms are the result of the presence of toxic elements in the circulatory system.

Foreign Doctors Excluded.—Italy is trying to conform to the illiberal precedent of her French and Swiss sisters, and to impose prohibitive conditions on practitioners of non-Italian qualifications.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

PROLAPSE OF THE RECTUM.—SUTURE OF INTESTINAL PERFORATION DUE TO TYPHOID FEVER.—CURE FOR VOMITING IN PHTHISIS.—SALINE INJECTIONS.

AT the Société de Chirurgie, November 11, 1896, BAZY presented a woman upon whom he had performed an *operation for prolapse of the rectum* nearly three years previously. The prolapse formed a mass measuring 18 by 14 cm., and it was reduced and stitched by five sutures to the coccyx by the method first described some years ago by Gérard-Marchant. Recovery was complete, and there had been no relapse, although pregnancy and a miscarriage at the seventh or eighth month had since occurred.

GERARD-MARCHANT, who was present, mentioned other cases in which the results of this operation—recto-coccypexy—had satisfactorily stood the test of time. The more recently devised colopexy in which an attempt is made to hold up the rectum by stitching it to the sigmoid flexure has not been in use long enough to test its merit.

At the session of November 18, 1896, the subject was still further discussed, and NELATON stated that colopexy was only to be recommended in severe cases where other measures failed. A patient upon whom he had performed this operation died on the sixth day of septic peritonitis.

WALTHER described a *congenital cyst of the neck*, which was still small at six months, but when the child was a year old it had grown so as to seriously compress the vessels. Aspiration of its contents—serous fluid—gave immediate relief, but the cyst rapidly refilled. Such cysts ought to be removed entirely. Even if they are intimately associated with the blood-vessels, their attachment is usually such a slight one that the cyst wall can be peeled off without difficulty. An exception has to be made in favor of mediastinal prolongations, if such exist.

The *suture of perforations of the intestine occurring in typhoid fever* was recently discussed before the Académie de Médicine by MONOD. By further search through medical literature he found a total of 32 operated cases, with 5 recoveries. In 3 of these the record was not as complete as it should be. The other 2 recoveries were absolutely certain, and granting that every perforation occurring in typhoid fever is fatal, even this small percentage of recovery is sufficient to justify operation in every case in which the general condition of the patient will permit it.

In an operation of this kind performed by ROUTIER upon a patient eight or nine days sick with typhoid fever, the surgeon had no guide to the localization of the perforation other than the pain localized in the right iliac fossa. He found and sutured two perforations and left the peritoneal cavity open, draining it with gauze. Unfortunately, death followed in eleven days from new perforations occurring in the neighborhood of the sutured ones.

Further observations upon this subject were made at the session of November 25, 1896, when BRUN reported a case occurring in a boy of fourteen years who, during a relapse after typhoid, and one month after he first entered the hospital, presented suddenly all the signs of acute perforation. On the following day, although septic peritonitis was well established, Brun opened the abdomen from the umbilicus to the pubis, found the perforation, sutured it, flushed the abdominal cavity with four quarts of boiled water, and closed the wound over gauze drains. Thanks to injections of serum the patient made a slight gain, but on the third day fecal matter appeared along the drains, and death followed on the seventh day after operation. The sutured perforation was in good condition, but there were five other perforations, and in the wall of the small intestine there was a considerable area, completely necrotic.

LEJARS has twice operated for typhoid perforation. In both instances with a fatal result. One of these failures was the more discouraging, in that the operation was performed in about sixteen hours, the perforation was easily found and quickly closed. The patient left the table in good condition, but died on the third day. No other perforations were found at autopsy, and the death was attributed to the typhoid fever itself.

At the session of the Société de Thérapeutique, held November 25, 1896, **MATHIEN** described his treatment for the *vomiting of food in phthisis* when occasioned by a persistent hacking cough. Attempts to control the cough and so prevent the vomiting by giving opiates, or by means of blisters and the cautery, have not been successful. The trouble lies with the too sensitive mucous membrane of the stomach. Mathien first gave his patients bits of ice to swallow after eating. This was successful in preventing the cough. Later he made use of chloroform water, one-half saturated, and menthol. Two to four teaspoonsful of the chloroform water and ¼ to ⅓ of a grain of menthol, taken immediately after eating, has relieved this cough in his patients and prevented the vomiting.

FERRAND looked upon these attacks of vomiting after meals as reflex and often due to an excessive sensibility of the pharynx. In such cases he has practised with success the repeated application to the pharynx of a solution in glycerin of bromid of potassium, ten per cent. or even twenty per cent. This application should be made before meals, The effect is to diminish the sensibility of the pharynx and cause the vomiting to disappear.

At the Société de Biologie, November 28, 1896, **ROGER** explained the experiments he had undertaken to determine whether intravenous injections of saline solutions really do produce a *lavage of the blood* as has been claimed. They increase diuresis, but it does not necessarily follow that poisons in the body are thereby eliminated. To determine this point, Roger injected small quantities of cyanid of potassium into the veins of several rabbits. A part of the animals then received into their veins 100 to 160 c.cm. of saline solution. The presence of the cyanid in the urine was shown by a blue color upon addition of ferric chlorid. The reaction was obtained in the control rabbits in thirteen minutes, while in those which had received the saline solution it was evident in seven minutes. Further, it disappeared from the urine of these rabbits in three hours and forty-five minutes, but lasted in the urine of the control rabbits four hours and a half.

Experiments with the indigo sulphate of soda gave similar results, and on account of the staining of mucous membranes and skin which follows the intravenous injection of this substance, the action of the saline injections could be followed with the eye. The blue tint disappeared more rapidly in those animals which received saline injection than it did in the control animals, so that the skin and mucous membranes of the former had resumed their normal color, while those of the latter were quite blue.

One is safe, therefore, in saying that the saline injection really does cause a lavage of the blood, or more correctly, a lavage of all the tissues of the body.

The clinical testimony to the action of *saline injections in infants* was brought out in the Société médicale des Hôpitaux, November 27, 1896, by **BARBIER**, who has treated a number of nursing infants suffering from intestinal infections, by subcutaneous injections of a sterilized solution, 7–1000. The injections were made under the skin of the sides of the abdomen, and did not exceed 15 c.cm. twice a day. Following the injections there was observed a stimulation of the whole organism, apparently the result of increased blood pressure and an elevation of temperature.

In general the injections are not indicated in acute infectious enteritis with fever, or in chronic enteritis marked by fever and progressive wasting. The injections did not have any action on the diarrhea, nor upon the other symptoms except the collapse, and there did not seem to be any real beneficial effect upon nutrition.

COMBY thought that saline injections were to be classed with caffein and ether. They provoke a more or less active stimulation of the body, but usually only a temporary one.

HAGERN considered saline injections one of the most powerful of sthenic remedies. Looking upon them in this light, they were seen to be indicated in conditions resembling that of cholera, but probably would be found to be useless in gastro-intestinal dyspepsia.

Vienna.

RESECTION OF THE TRACHEA.—OSTEOMALACIA.

In the session of the Medical Society held November 13, 1896, **FÖDERL** presented a six-year-old boy upon whom he had performed *resection of the trachea* with circular suture. The child's trachea had been cut entirely through just below the cricoid cartilage. The posterior wall had been sutured immediately, and five days later the rest of its circumference was sutured except where a canula was kept in place. There was so much contraction in the scar that phonation was completely lost and symptoms of stenosis developed. Föderl performed tracheotomy low down, resected the scar tissue to the extent of 2½ cm., and brought the ends together by a circular suture. The result was perfect.

In the Vienna Medical Club, November 11, 1896, **HERTZ** presented two patients suffering from *osteomalacia*. One of them was a shoemaker whose back for twelve years had been growing more bent. For a short time he had noticed redness and swelling in certain finger-joints. Examination showed that rotation and anterior flexion of the head was impossible, owing to synostosis between the occiput and atlas. There was marked kyphosis. The pelvis presented the characteristic prominent symphysis seen in osteomalacia.

The swelling of the joints disappeared promptly after the administration of salicic acid. Hertz was therefore of the opinion that the affection of the joints was rheumatic in its nature, and that the case was therefore either a combination of osteomalacia and rheumatism, or else that the whole process was rheumatic.

Latzko considered this an undoubted case of osteomalacia, which he said often began with joint affections. Moreover, the fact that the patient was a man was nothing against the diagnosis. He had seen four cases of this disease in the male. He advocated the use of large doses of phosphorus, although they occasionally caused periostitis.

Kassiowitz believed that it is possible to secure the same effects with small doses of phosphorus. Even with children no symptoms of poisoning ought to follow its use.

Singer thought the case presented was one of arthritis deformans, a disease which has many points of resemblance with osteomalacia, especially with the so-called senile form of the latter. He also called attention to the fact that pes valgus is often an early symptom of osteomalacia.

Braun was able to observe the motion of the heart in a case of extensive resection of the ribs. The apex of the heart does not move downward, outward, and to the left in systole, but upward and to the right. At the same time the base of the heart moves downward. The contraction of the left ventricle is very rapid like a flash, that of the right is a gradual, wavy motion accompanied by a similar motion of the pericardium.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE.

General Meeting December 3, 1896.

Joseph D. Bryant, M.D., President.

THE MANAGEMENT OF PNEUMONIA.

S. Baruch, M.D., read a paper with this title. (See page 1.).

DISCUSSION.

Dr. Charles B. Folsom of Boston opened the discussion. He said that at the Boston City Hospital he had tested the cold-bath treatment in thirty-six cases of pneumonia, all of a severe type. The method consists in placing the patient in a sheet, and rubbing him with a towel and water at a temperature varying from 70° to 95° F., for about ten minutes. The patient is then wrapped in a blanket and allowed to rest for half an hour. Of these thirty-six cases, eight died, a mortality of 22.2 per cent. The mortality in that hospital for croupous pneumonia averaged about thirty-five per cent. Of the fatal cases, one had typhoid fever, one had pleurisy, three were victims of chronic alcoholism, one had general diplococcus infection, as shown by the presence of endocarditis, pericarditis, and cerebral meningitis; one had chronic nephritis, and one had phthisis. As death was only hastened by an intercurrent pneumonia in the case of phthisis, the patient dying on the thirty-first day, and as the case of chronic nephritis was fatal on the second day, these might fairly be excluded. If this were done, the mortality would be 17.6 per cent. He had been convinced from the observation of these cases that the cold baths were very effective, and he was more than satisfied with the results. In marked contrast with the bath treatment of typhoid fever was the fact that all these patients said that the baths were grateful to them. In conclusion, he would say that these baths controlled the fever, diminished the cough, lessened dilirium, and induced sleep.

Dr. E. G. Janeway said that his experience had led him to dread the afebrile pneumonias of old people more than the highly febrile pneumonias of the young. In the former, neither cold baths or cool compresses had any place; all our efforts must be directed to sustaining the failing strength of the patient. These cases were exceedingly fatal notwithstanding the comparative absence of symptoms. We must look at pneumonia in several different aspects, and must take into consideration, not only the toxemia and the inflammation of the lung, but the individual reaction. Although the prognosis was necessarily very grave in cases in which as much as three lobes were involved, he had seen a number of these cases recover, and in these the treatment had consisted chiefly in the use of oxygen, alcohol, and the so-called cardiac stimulants. Oxygen was of special value when the breathing capacity was markedly diminished, and we could not afford to overlook this fact even though we called pneumonia an infectious disease. Heart stimulants might be required, either early or late, in this disease, and when such a contingency arises as edema of the sound lung, cardiac stimulants must be given hypodermically. He thought the cold compresses made the patients about as comfortable as any other measure, yet he was bound to admit that he had seen a number of pneumonia patients do very well with nothing but a flannel shirt. He was not one of those who believed in decrying the coal-tar series of drugs, simply because a number of physicians, following more particularly the example of the Germans, had observed bad results from their use in unnecessarily large doses. When administered judiciously in proper cases and in moderate doses, they would be found to be of very great value. For example, he had very recently seen a severe case of pneumonia with a temperature of 106° F. The patient had had but little sleep, was slightly delirious, and had a rapid pulse. In this case he had recommended giving five grains of phenacetin, and repeating it, if necessary, in two hours. As a result of this the temperature remained low for about six hours, and the patient slept well that night. True, the temperature rose the next day to about 105° F., but the next night a dose of six grains of phenacetin was sufficient to secure another good night, and after this the temperature remained low, and the patient made an uninterrupted recovery. He mentioned this case because cold applications had been used to no purpose, while phenacetin had accomplished the desired result. Morphin might have done the same thing, but it would probably have also caused constipation and disturbance of the liver. Our rule in the use of these particular drugs, as with all others, should be to give the smallest dose which will accomplish the desired result. Much had been said about the responsibility of aborting pneumonia. Years ago he had been skeptical about the possibility of calomel doing this, as had been claimed, but since then he had occasionally observed cases which seemed to prove that this might sometimes occur. It was, however, decidedly exceptional. It was right and proper to make an effort to abort the disease, and hence if we saw a case in the chill stage, we should direct that the patient's feet should be kept in a warm bath for half an hour, and that he should be given hot drinks, sweet spirits of niter, liquor ammonii acetatis, and aconite, and subsequently, a large dose of quinin.

Dr. W. P. Northrup referred to a case in which he firmly believed that by the use of similar measures at the onset of the first symptoms he had succeeded in preventing the development of a genuine pneumonia. He said that he too had met with many cases of afebrile pneumonia in old people; but he was unable to say much about their treatment, as they had invariably proved fatal. In all cases of pneumonia he was particular about securing an abundant supply of fresh air to the sick room, if necessary, by keeping the patient near an open window. He had not the slightest fear of these patients catching cold so long as the feet were kept warm, and there was a high fever. He also gave oxygen in pneumonia, but usually, as he had said, by way of the window. He had learned from Dr. Baruch that a bath of 90° F. would often calm a very excitable patient with an alcoholic pneumonia, and would at the same time improve his general condition. He had proved by experience the benefits of hydrotherapy in pneumonia, and believed that in this disease the effect of such treatment could be briefly summed up by saying that it quieted the mental excitement, improved the quality of the pulse, increased the depth of the respirations, and promoted sleep.

Dr. Alfred Meyer said that he had tried the effect of the "digitalis treatment" of pneumonia in his service at Mt. Sinai Hospital, with the result that only two out of twelve patients died. According to the author of this treatment, the daily dose of the drug should be as high as 60 to 120 grains of the digitalis leaves.

Dr. Baruch, in closing the discussion, said that he had not observed any of these cases of pneumonia occurring in old age without fever, and with but few other symptoms. He could not subscribe to the recommendation of oxygen gas, for it seemed to him that according to the law of the diffusion of gases it could not be taken into the system in any quantity. He, however, approved very highly of the principle of this treatment, and made it a point to supply the patient with as much oxygen as he could absorb by giving him an abundant supply of fresh air. He approved of the use of digitalis as a heart stimulant in the early stage of pneumonia, but in the later stages, when the heart was working hard to overcome the contraction of the peripheral blood vessels arising from the action of the toxins, the administration of digitalis did not meet with his approval; it seemed too much like spurring on a jaded horse. The failure of the cold applications in the case in which Dr. Janeway had found phenacetin so efficacious could in all probability be explained by the manner in which they had been made. As he had said in his paper, everything depended upon the exact manner in which the cold compresses were used. It was for this reason, he believed, that the profession had been so long in recognizing the great value of this method of treating pneumonia.

MEETING OF THE NORTHWESTERN MEDICAL SOCIETY.

October 21, 1896.

Frederick Peterson, M.D., read a paper entitled

MUSICAL AND ARITHMETICAL PRODIGIES AND COURT-FOOLS.

He said that the term "idiots avants" is applied to all such idiots, imbeciles, or feeble-minded as exhibit special aptitudes of one kind or another, always out of proportion to their intellectual developments in other directions, and often remarkable as compared with similar developments or faculties in normal individuals. He spoke of the many cases of this kind recorded in the literature, and of those who are exhibited as musical prodigies, calculating boys, and the like in the museum.

Precocity and an extraordinary power of the faculty of mental arithmetic have been frequently noted in idiots. This faculty consists entirely of excessive powers in simple calculation, and is observed only in the congenital variety of idiots, imbeciles, and degenerates. In idiots, in whom the musical faculty is well developed in contrast to the general intellectual paucity, it is not of a high order. It consists of a remarkable auditory memory, together with a power of expression by means of the vocal musculature or fingers of the musical memory stored up in the brain. There is no spontaneous musical expression, no power of invention.

Examples of idiots avants with talents bespeaking disproportionate development of the visual centers, together with the power of reproduction by modeling, drawing, or painting, are occasionally to be met with.

Among idiots, imbeciles, and feeble-minded it is not uncommon to meet cases with an aptitude for drollery, and given to witty or humorous remarks and actions. The court-fools of Shakespeare are the types of this class of degenerates. Any quick-witted imbecile or feeble-minded individual in ancient times had no difficulty in securing a good livelihood, and sometimes even prosperity and fame. Under such conditions it became common for normal individuals to adopt the calling of the jester or buffoon, and these were known as artificial fools. The reader summarized in the following:

The idiots avants are mere copyists in music, modeling, designing, or painting. Yet at the same time their talents stand out in strong contrast to their general feeblemindedness. As a rule the aptitudes are precociously developed, and are frequently lost before reaching adult life. The physical basis of such talents must be a precocious perfection of the cerebral organization in certain areas, together with a true hyperplasia of tissue in such regions, and a tendency to early degeneration. There must be an increased number of cellular elements and sensorimotor combinations and associations in definite parts of the brain. Cases of misplaced aggregations of such tissues in the brain have been described under the name of heterotopia of gray matter, and it is possible that some such unequal distribution of the structures underlying psychological processes will be found to account for the presence of the extraordinary talents of idiots avants.

Dr. Fruitnight thought that the intellectual possessions of these degenerates were confined exclusively to the imitative faculty.

Dr. Newman said that if we could have *post-mortems* and careful histological study of some of these cases, it would be of great interest in going to establish the anatomical substratum of their possessions and defections.

Dr. Bulkley asked if the reader of the paper had given any consideration to the theory propounded by Hudson, particularly in regard to the subjective and the objective mind. He thought it worthy of consideration by physicians, especially in the explanation of faith-cures, hypnotism, and the phenomena of love.

Dr. Burchard mentioned an opportunity which he had had to observe the case of an idiotic girl who evinced remarkable mathematical power, on whom Charcot made some of his first experiments in hypnotism. She could add, multiply, and divide with astounding rapidity and accuracy, and perform the most perplexing tasks in mental arithmetic, yet she was a typical idiot in almost all other respects.

Professor Pupin of Columbia University said that when lines of social divisions were much more strictly drawn than they are to-day, it was those of the inferior caste who devoted themselves to music, and not the masters. Among the Slavs and Italians, and some others of the Latin race, there are found many who excel in particular things, and especially in the productiveness of their emotional side, but often such excellence is associated with a lack of proper balance or interrelationship of all their mental possessions. On the other hand, the Anglo-Saxon race possessed this desirable balance of mind to an exceptional degree; in fact, that is their distinguishing characteristic.

Dr. H. L. Taylor alluded to the fact that advanced educators aimed to ascertain the special aptitudes of their pupils, in order to use them as centers for the coördination of studies, and as a basis for introducing the child's mind to related topics. He asked if the special aptitudes of the defective might not be similarly used, so that deficient parts of the mind might be educated by means of the proficient.

Dr. Peterson, in closing the discussion, said that he had collected as many cases from the literature as he could find to call the attention of pathologists to the subject. Precocity was a condition that was of interest in considering the subject of idiots avants, as the two are perhaps somewhat allied. The contentions of Hudson he believed to be speculative, without justifiable premises. There certainly exist many cases of absolute idiocy. Any faculty that defective children have well developed, be it visual, auditory, or other, should be developed, because through it, later, the necessary associative faculties may be developed.

He thought that music was a sensual, not an intellectual art. Intellectual men take up pursuits that are engrossing, and music remains for them an indulgence. Those of inferior possessions may be unfit for such pursuits, and music may be for them an occupation, and a very absorbing occupation.

In the time of court-fools, those who were odd in body as well as in mind were selected for this office, and if they were not fools by nature, they sought to become fools by artifice, because of the profitable nature of the calling. Any physical deformity, such as ugliness, dwarfishness, kyphosis, clubfoot, etc., was always of genuine advantage to the artificial fool.

Professor Pupin of Columbia University exhibited a "focus tube" containing two electrodes, the cathode one concave, the other flat and made of platinum. The electric discharge starts from the source of the X-ray, and the focus becomes the point of radiation. By this means the intensity of the ray is increased perhaps a hundred fold. Increase in the intensity of the ray is due to the employment of a platinum disk. To contribute to the intensity, all the gas must be absorbed, and the tube must represent as nearly a perfect vacuum as possible. If the proper vacuum is obtained, and the electric current has a proper intensity, then the platinum disk on which the cathode rays are focussed glows in a small point, which is brought to a white heat, while the remainder of the platinum is only at a dull-red heat. The space inside should be kept at a definite temperature. This is done by heating the tube with a Bunsen burner or a spirit lamp; or, what is still more convenient and reliable, a small platinum-wire helix is placed inside the tube surrounding the glass tube which carries the cathode. This wire is connected to a storage battery, and the heat thus produced will regulate the temperature of the vacuum-tube.

The second device relates to the regulation of the current, and is as follows: Connect one of the electrodes of the vacuum-tube to a brass screw, and regulate properly the length of the air-gap between this screw and one of the poles of the induction-coil.

The speaker also exhibited a skiagram of a fourteen-year-old boy's spinal column, the result of a ten minutes' exposure, and remarked that as the use of the X-ray became more and more perfected the time of exposure was lessened.

The X-ray has many of the peculiarities of many other luminous rays, especially in regard to its being selectively absorbed by substances. It is in this direction that the possibility of differentiating the various internal tissues of animal bodies must be sought.

REVIEWS.

A MANUAL OF PHARMACOLOGY AND THERAPEUTICS. By WILLIAM MURRELL, M.D., F.R.C.P., Physician to and Lecturer on Pharmacology and Therapeutics at the Westminster Hospital, etc. Revised by FREDERICK A. CASTLE, M.D., Member of the Committee for Revision and Publication of the U. S. P., etc. New York: William Wood & Co., 1896.

THE American edition has been considerably changed from the original English form, not only with regard to the necessary alteration of official preparations, but by the introduction of much new matter in the sections on Climate and Natural Mineral Waters, credit being given to Dr. Arthur H. Nichols of Boston, and to Dr. George E. Walton of Cincinnati, respectively. The volume consists of 516 neatly printed pages, without illustrations. The introductory part of 140 pages discusses ancient remedies, sources, and adulterations of drugs, idiosyncrasy, habit, cumulation, incompatibility, etc., and such non-medicinal methods of therapeusis as venesection, transfusion, electrotherapy, "cures" of various kinds, diet, exercise, etc. Under the head of palatable prescripting, the author regrets the paucity of the vehicles of the British Pharmacopœia. In "The Art of Prescribing," it seems to us that the author has been influenced too strongly by antiquated conceptions. We find no evidence of the principle of giving one thing at a time, and with reference to a definite physiological action. The work is avowedly a student's text-book, yet the author starts with a cough-mixture of morphin and chloroform, which is allowable only in the most exceptional cases. Illustrative of the treatment of dyspepsia—which kind is not stated—we find a mixture of sodium bicarbonate, chloroform and gentian, whose only claim to respectability is its age. Again, we note an acid combination of quinin to be given before meals. The formula of an "excellent purgative pill" is given as follows: Calomel gr. iij, extract of hyoscyamus—enough to make a pill. The American reviser very mildly remarks that "when there is daily need for a peristaltic persuader, calomel is not altogether desirable;" we would add that the propriety of treating extract of hyoscyamus as a mere vehicle, to be used at the pharmacists' discretion, is questionable. We hardly know whether to praise or blame the author for omitting all reference to Latin in prescribing. There follow sections devoted to inorganic subjects, synthetical compounds, vegetable, and animal drugs. One of the most useful parts of the volume is a few pages giving lists of drugs in pharmacological groups. The classification makes no pretense to completeness, and is all the more useful for being clinical rather than strictly scientific. For example, one wishing a diaphoretic has a choice of muscarin, picrotoxin (*sic*), Dover's powder, and several others; "mouth-dryers," producers of glycosuria, vesical, and urethral alteratives, and other therapeutic groups are listed. A number of formulæ are appended, some of which are excellent, others simply time-honored. In the index is included the maximum single adult dose of each drug. On the whole, we are forced to the verdict that the volume does more credit to the publishers than to the author, and we hope it is not national pride that leads us to say that the work can in no way rival the standard text-books of Wood, Shoemaker, Hare, and other American authors.

TWENTIETH CENTURY PRACTICE. An International Encyclopedia of Modern Medical Science. By Leading Authorities of Europe and America. Edited by THOMAS L. STEDMAN, M.D. In Twenty Volumes. Vol. viii: Diseases of the Digestive Organs. 8vo., pp. 667. New York: Wm. Wood & Co. 1896.

This, the eighth volume of the Twentieth Century Practice, represents the work of eight contributors, by whom the subjects have been treated as follows: Diseases of the Mouth, by Johann Mikulicz and Werner Kümmel; Diseases of the Esophagus, by Reginald H. Fitz; Diseases of the Stomach, by Max Einhorn; Diseases of the Pancreas, by H. Leo; Diseases of the Peritoneum, by E. Farquhar Curtis; Animal Parasites and the Diseases Caused by Them, by J. Ch. Huber; Treatment of the Diseases Caused by Animal Parasites, by Jas. M. French. As may be seen, the several articles have been mostly written by those especially competent to write upon their respective subjects. The individual contributions are comprehensive, without being redundant, and they represent the most recent views, both pathologic and clinical. The volume altogether maintains the reputation established by its predecessors in the series, and stands upon the high plane aimed at by editor and publishers. It would have been a natural arrangement to follow Diseases of the Stomach by Diseases of the Intestines, then both by Animal Parasites, and finally to group Diseases of the Liver, Diseases of the Pancreas, and Diseases of the Peritoneum together, but we can understand that circumstances beyond immediate control should have necessitated modifications of such a plan. The article on Diseases of the Peritoneum includes a consideration of the subject of appendicitis, as well as of peritonitis, due to perforation of stomach or bowel, and of subphrenic abscess. Although rather a pathologic than a clinical manifestation, abdominal fat-necrosis is so often found associated with disease of or about the pancreas that it would seem to be deserving of notice in a Practice of Medicine.

AN AMERICAN TEXT-BOOK OF APPLIED THERAPEUTICS. For the Use of Practitioners and Students. Edited by J. C. WILSON, M.D., Professor of the Practice of Medicine and of Clinical Medicine in the Jefferson Medical College, Philadelphia, etc., assisted by AUGUSTUS A. ESHNER, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic, etc. W. B. Saunders, Philadelphia. 1896.

This bulky volume of 1326 pages embodies the contributions of the two editors and over forty collaborators, many of them distinguished specialists, teachers, and investigators. Only two of the contributions are from foreign pens—that on malaria, by Professor Laverau of Paris, and that on leprosy, by the late Dr. Beaven Rake, Medical Superintendent of the Trinidad Leper Asylum. The work is essentially one on treatment, as its name, "Applied Therapeutics," implies, and is an amplification, by skilled writers of similar chapters found in some text-books on therapeutics.

The subjects have been arranged, so far as possible, upon modern pathologic doctrines, and include most diseases and pathologic processes, as well as a consideration of the disorders of pregnancy. Purely surgical procedures have been omitted.

The articles are well illustrated, when necessary; that on diseases of the mind, by Dr. John B. Chapin, particularly so.

To those who prefer their theory and practice of medicine dismembered, as it were, this book will prove very acceptable; but there are those still among us who cling with fondness to old tomes in which the same master-hand wrote on all branches pertaining to his art.

That specialism has rendered this impossible is partly true and wholly lamentable, for we need carry the same idea on but a few steps and foresee the time when this extreme subdivision of work will invade practice as it has literature; and the already much-tossed-about-and-torn patient, having the etiology, pathology, diagnosis, and prognosis of his disease determined by four separate men, will then be handed on to a fifth for treatment. Whether specialists in euthanasia will then arise to administer permanent relief, time alone will tell.

There is really very little to criticize in the book. Many will not agree with one author that mercuric chlorid is a wise disinfectant for typhoid stools and privy vaults, but this little slip is more than compensated for by the author's loyal advocacy of the bath in the treatment of enteric fever.

It is a pleasure also to note the faith Dr. Danforth has in blood-letting in croupous pneumonia.

Altogether, the work is admirable, up to date, practical, and not too controversial.

A TEXT-BOOK OF HISTOLOGY. Descriptive and Practical, for the Use of Students. By ARTHUR CLARKSON, M.B., C.M., Edin. W. B. Saunders, Philadelphia. 1896.

The aim of the writer of this work on histology has been to furnish the student in one volume of 554 pages, with both the descriptive and practical parts of the science. With this aim two chapters are devoted to the consideration of general histologic methods, and then the different tissues are taken up in fifteen subsequent chapters.

In each chapter the plan of treatment is first to give the finer anatomy and the physiology of the organ or system in question, and then the essential features of microscopic sections prepared from it are fully described. Each chapter is followed by a brief appendix in which the technic of preparation of the sections just described is given. The description is accompanied by carefully drawn plates in the same colors as the microscopic sections present. For example, turning to the chapter on the lymphatic system, there is first given a brief description of the lymph and the lymphatic system. Under the subdivision "Origin of the Lymphatics," the "lymph spaces," "lymph capillaries," "central lacteal of a villus," "perivascular lymphatics," "serous cavities," and "synovial sheaths and ursæ" are considered. Under other subdivisions of this chapter are "The Lymph Vessels," "The Solitary Follicles," and "The Lymphatic Glands." The sections described in detail are, (*a*) the "central tendon of the diaphragm of guinea pig stained with nitrate of silver," and (*b*) "section of lymph gland of mammal stained with hematoxylin or picrocarmine." Eight drawings in colors appear in connection with this chapter, four of them to illustrate the sections mentioned; one the perivascular lymphatics, while three are diagrammatic representations of a "serous cavity," a "solitary follicle," and "the origin, cause, and termination of the lymph channels."

This sketch of a single chapter will show the plan of the book. The arrangement of subject matter in such a methodical manner, and the excellence of the numerous plates (174 in all), are the features of the histology which will most commend it as a text-book and book of reference.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION. Vol. XIII. Philadelphia. 1895.

The thirteenth volume of the Transactions of the American Surgical Association, uniform in style with those which have preceded it, is a book of 516 pages. It contains a number of interesting articles, *e.g.*, five upon the "Operative Treatment of Cancer in Various Localities," by Homans, Conner, Wight, McGuire, and Gerster, and four others upon "Restoration of Joint Function after Fracture," by Carmalt, Sayre, Roberts, and Bradford.

It speaks well for some one's power of restraint that among the thirty-three papers there is none upon appendicitis, nor intestinal resection: neither is tuberculosis mentioned.

BOOKS RECEIVED.

Weekly Abstracts of Sanitary Reports, vol. x, 1895. The bound volume of these reports issued from the Surgeon-General's office makes a convenient and valuable book of reference.

Transactions of the Pan-American Medical Congress, held in Washington, D. C., U. S. A., September, 1893. The report is presented in two octavo volumes and occupies 2250 pages. The detail of the various sections as well as that of the general sessions seems complete and full, and makes an interesting and instructive addition to the literature of medicine and surgery. The newest and best thought from every quarter of the American Continent was contributed, and at once gave this congress a high rank among the scientific gatherings which have distinguished the latter part of the nineteenth century. To have distributed free of cost to the medical profession these volumes is an act of liberality on the part of the U. S. Congress, not soon to fade from the grateful minds of the many who have received them.

Transactions of the Michigan State Medical Society, 1896, makes an attractive volume of more than eight hundred pages, and contains many articles of more than passing interest.

Transactions of the Southern Surgical and Gynecological Association, 1895. A handsome volume of three hundred neatly printed pages. The good work so uniformly done by this association leads one to expect fine material in this, the eighth volume, and no sense of disappointment will attend its perusal.

Transactions of the American Orthopedic Association, vol. viii, 1895. This volume contains a large number of handsomely illustrated articles and their discussions, which must appeal to all exponents of this special branch of surgery.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

NEW METHOD OF PERFORMING INTESTINAL ANASTOMOSIS WITH SPECIAL REFERENCE TO ITS ADAPTABILITY TO INGUINAL COLOSTOMY AND SUBSEQUENT RESTORATION OF THE FECAL CURRENT.

BY J. A. BODINE, M.D.,
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ADJUNCT-PROFESSOR OF SURGERY IN THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

THAT so many ingenious methods of performing intestinal anastomosis have an active and practical existence is proof that none of them is entirely satisfactory. Without mechanical contrivances it is a most difficult operation, and calls for exhibition of the highest surgical skill; with mechanical aids it is less difficult, but these have not yet proved entirely reliable or harmless. The mortality as it stands today is high, partly because of dangers inherent in the operation, and partly because of delay entailed by a course of temporizing therapeutics, thus impairing the patient's strength. The great activity of surgical thought in this particular field will no doubt sooner or later solve the question of a rapid and safe method of approximating the two ends of the severed intestine; and it is with the hope of contributing to this achievement that I offer the results of my individual efforts.

The method to be detailed is the outcome of thought directed toward improving the spur in inguinal colostomy. It can readily be seen that if the spur stands flush with the skin surface, no fecal matter can enter the portion of colon beyond the site of operation, but the spur formed by suspending the gut over a supporting pin or rod has no thickness or rigidity, and the constant dragging weight of the intestines within the cavity soon pulls its upper border below the level of the skin surface, thus permitting passage of fecal matter into the lower portion of the intestine (Fig. 1). It occurred to me that the mesentery of the loop might be folded so as to stiffen the spur by stitching together both sides of the two limbs of the flexure. This, being tried on a dog, was found to furnish the desired remedy, and, furthermore, was capable of easy and rapid execution. As this acute flexion of the gut upon itself forms a septum fully an inch in width between the two rows of sutures, it will be readily seen that simple division along the center of this spur removes all obstacle to the flow of the current beyond the abdominal opening into the lower portion of intestine. We therefore have a simple means of restoring continuity when the proper time arrives.

Five dogs have been subjected to the operation in its two different applications, *viz.*: (1) Enterostomy, as recommended for intestinal anastomosis and temporary anus, by *excluding* the mesentery from between the two rows of sutures, and (2) colostomy, as recommended for permanent anus, by folding the mesentery between the two limbs of the flexure. The details of two of these experimental operations are given here, the others being reserved for a subsequent paper. A large male dog was chloroformed by the author, November 13, 1896, and the usual incision for colostomy made. The parietal peritoneum was stitched to the skin, the colon identified and drawn through the incision. On account of the short mesentery, but six inches could be exposed. The two limbs of this loop were laid side by side, acutely flexing the center, and sutured together for a distance of three inches. The first line of sutures was placed parallel with and close to the mesenteric border, the second row along the line of the convex borders. This was done by a continuous suture, requiring but one long strand of silk. The loop was now returned to the cavity until the point where the suturing commenced was on a level with the skin, and stretched into the abdominal wound. The protruding cap of the knuckle was clipped off close to the surface. Three days later the dog was again anesthetized, and the artificial anal orifice washed with a stream of warm bichlorid solution. The septum between the two intestinal orifices could be clearly seen, and by passing the blade of a pair of blunt-pointed scissors into each opening, was divided for a distance of 2½ inches. The bleeding was very insignificant, and *required no hemostasis*. The abdominal wound was closed by Byrd's method. For a number of days some fecal

FIG. 1.

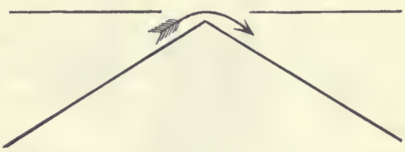


Diagram showing the intestinal spur drawn below the level of the skin surface by intra-abdominal tension, and fecal matter passing into lower portion of intestine.

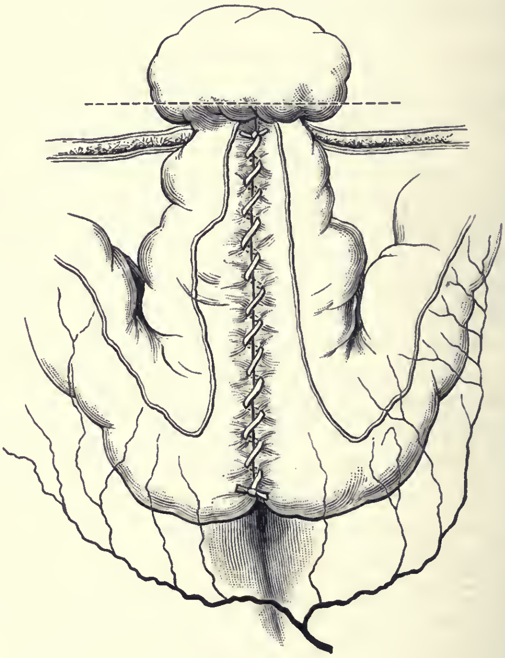
matter oozed through the wound, but it eventually closed, and the dog is perfectly well. This dog is being preserved, to show at a coming medical society event.

Wishing to test the method in the hands of another operator, Dr. J. Shelton Horsley of this city kindly chloroformed a small male dog on December 15, 1896, and performed the operation as recommended for permanent colostomy. The sigmoid flexure was drawn through the incision and a loop sutured together for a distance of three inches. The mesentery, in this case, was *folded in* between the two limbs by running the line of sutures on each side midway between the convex and mesenteric borders. After passing back the sutured loop and stitching it into the abdominal wound, the protruding cap was clipped off. One week later the dog was killed and the specimen removed. The gut presented two circular orifices at the abdominal opening, with the septum between clearly defined and standing flush with the skin surface. The lines of sutures were buried beneath a layer of organized lymph and the two opposed walls composing the spur were firmly welded together by this same material. This spur was extremely firm and rigid, measuring fully one-third of an inch in thickness. Looking at the specimen from the outer end, it resembled the muzzle of a double-barrelled shotgun, *the width of the septum measuring exactly the same as the diameter of the dog's colon.*

Suturing the parietal peritoneum is a procedure of great value. The cellular planes between the muscular layers are shut off from infection by the feces, preventing cellulitis, abscess, etc. The mesentery in dogs being short, but six inches of gut could be exposed, which gives a loop of only three inches when doubled upon itself. In man, eight or ten inches should be brought through the incision when possible. This gives a spur four or five inches long, which can be divided for three or four inches to furnish an ample anastomotic opening.

Without going fully into the defects of the present methods of intestinal anastomosis, I beg to point out that end-to-end suturing is time-consuming, and, even in the most skilful hands, leakage of intestinal contents between the sutures is frequent, as proved by the high death-rate from septic peritonitis. Lateral anastomosis by hand-suture is open to the same criticism. The mechanical aids, such as the vegetable, bone, and rawhide plates of Dawbarn, Senn, and Robinson, respectively, and Murphy's button, are open to many objections, and are considered unsurgical by some operators. The method I offer is applicable to any portion of the intestine which possesses a mesentery. I have not had the opportunity to practise this method in its entirety on man, but in dogs it works perfectly. Theoretically, it bears the stamp of the three ideal requisites, namely, (*a*) rapidity of execution, (*b*) safety of approximation, (*c*) ample anastomotic opening. Rapidity of execution is a desideratum of great value. Exposure of the abdominal contents, especially in the weak and non-resistent, has frequently brought about a fatal issue when the union between the intestinal ends has been perfect. Every one to-day recognizes the value of rapidity in intestinal work, and knows that each additional minute of exposure contributes to shock. Safety—by which I mean accuracy—of approximation, is the essential feature of the operation. The faulty application of a suture, bringing about leakage of intestinal contents, produces a certain fatal result. The third requisite, of ample anastomotic opening, has been one of the weightiest objections to the very ingenious Murphy button.

Fig. 2.



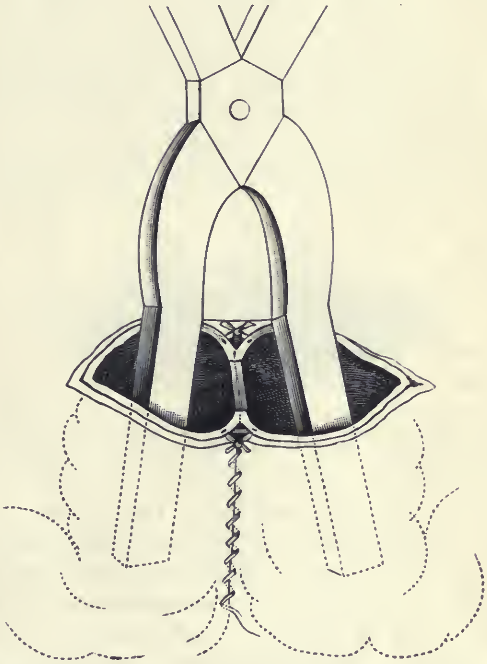
Intestinal anastomosis. Showing one side of the loop after it has been sutured, passed back into the cavity and stitched into the abdominal wound. The lesion is left protruding, and the dotted line indicates where protrusion is to be clipped off.

The method which I propose is as follows: After the usual preparation of the patient for laparotomy, and free purgation when possible, an incision of sufficient length is made down to the peritoneum. All hemorrhage being carefully arrested, the peritoneum is incised and a sterile pad introduced to protect the intestines while the parietal peritoneum is stitched to the skin with a continuous catgut suture. The lesion which has necessitated the operation (tumor, stricture, etc.) is now sought for and, when found, is drawn through the incision until six inches of healthy gut on each side of the piece to be exsected is exposed. The two limbs of the loop, with the lesion as apex to the knuckle, are laid side by side, the convex borders in apposition, and a running stitch of fine silk, beginning at the points where exsection is desired, is carefully inserted, uniting the two pieces of intestine close to and parallel with the mesenteric border for a distance of six inches (Fig. 2). The sutured loop is then passed back into the abdomen until the point where the running suture begins (*i.e.*, the point where the intestine is to be exsected), is on a level with the skin surface, and the loop stitched into the abdominal wound with a continuous suture of catgut. This leaves the lesion protruding. If waiting is permissible, twelves hours should elapse, and then under cocain anesthesia, the protruding intestine is snipped off with scissors level with the skin. Having established an artificial anus, we may now wait any length of time in order that the lymph thrown out may solidly unite the apposed walls of the sutured portions.

The next step is the reëstablishment of the continuity of the intestine. With a finger inserted into the opening of each portion of intestine, to define the spur and guide the cutting instrument, the septum is divided with scissors along its median line for a distance of four inches, or, better still, a clamp such as H. H. Grant's of Louisville, which crushes rather than cuts, may be used (Fig. 3). A moment's study of the accompanying illustrations will make the technic perfectly clear. It will not be necessary to take out a wedge-shaped section, as the passing of the feces will prevent reunion of the septum. The abdominal wound may now be closed by any method which suits the surgeon. I prefer the method of Szymanowski[1] or Byrd. The technic of the latter is here appended. In the most expert surgical hands, the integrity of the line of sutures approximating the two ends of severed intestine in an anastomosis is a matter of uncertainty, and the subject of grave anxiety to the surgeon until a movement of the patient's bowels demonstrates successful union. By the author's method, this danger of leakage at the line of co-aptation is entirely removed. Exsection of the lesion is performed *outside* the abdominal cavity and the anastomosis effected subsequently with little or no additional risk. In the hands of experienced operators, the mortality of stitching the loop of gut into an abdominal wound and, after plastic exudation has sealed this line of stitches, clipping away the protruded portion, under cocain anesthesia, would probably not exceed two in a hundred. Add to this, for completion of my operation, a simple division of the spur, which should be devoid of danger, or nearly so, and it would seem that the method offers great hope of being a life-saving procedure.

In inguinal colostomy the operation is to be considered a failure if any fecal matter passes the opening into the distal portion of intestine. The originators of the different methods now in use admit that in this respect the spur is incompetent. Mathews of Louisville, Ky., who uses two hair-lip pins thrust through the mesentery, says: "The fecal current is not always diverted." Kelsey of New York, speaking of colostomy in general, takes the inefficiency ot the spur for granted, saying: "Relief of pain and tenesmus is sometimes only partial, because a portion of the feces passes the opening." The use of any mechanical support, such as glass rods, pins, etc., to hold the loop of gut in the abdominal wound while adhesions are forming, is, like the mechanical contrivances for anastomosis, incompetent and unsurgical. The spur will sag below the level of the skin when the support is removed. Of the present advocated operations, the nearest approach to efficiency is Allingham's "mesenteric stitch," but Mathews, who is a great admirer of this method, admits that it occasionally fails to completely divert the current. According to Allingham, procidentia occurs in six-

Fig. 3.



Intestinal anastomosis. Showing the septum to be divided in restoring the fecal current. Grant's clamp in position for the division. (In permanent colostomy this septum remains as a rigid and effective spur. Contrast this with diagram 1, which shows the spur formed by suspending the gut over a supporting pin or rod.)

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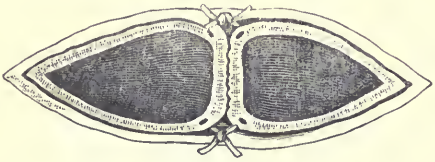
[1] "Wyeth's Surgery," second edition, page 702.

teen out of sixty cases, and to avoid this he has advised drawing the gut out of the wound until the mesentery is taut, stitching it, and, subsequently, under ether narcosis, excising all the protruded portion with a specially devised clamp. He confesses that cutting away such a large mass of intestine adds to the gravity of the operation, and Treves criticises the procedure as unnecessary and severe.

Cripps draws the intestine out of the wound, passes it over his finger back into the abdomen until the mesentery is taut, and then stitches it. This plan is preferable to Allingham's, but it may be objected that the opening is placed too high up the gut. The nearer the opening is to the rectum, the more comfortable will be the patient. The fecal mass being more or less solid, the movements can be confined to one or two a day, with the aid of diet and astringent medicines; while, if the opening is high up the gut, there is the annoyance of a continuous excoriating and offensive fluid discharge.

The last and most formidable criticism of the present technic in inguinal colostomy, is the difficulty of reëstablishing the fecal current, should this be desired. A laparotomy and intestinal anastomosis must be done with all the attendant dangers of handling the septic anal orifice in the peritoneal cavity. Depuytren's clamp is hardly to be considered. "Nearly all attempts to reëstablish the anus at its natural site after colostomy have signally failed." (Mathews). That such dangers attend the restoration of the intestinal continuity has probably done much to place the operation in the position of being applicable only to ineradicably obstructive lesions of the colon. No one would dare, in the face of the high mortality, to advocate or perform colostomy for acute lesions, such as inflammation, ulceration, etc., which physiological rest might cure. The operation which I propose will obviate these three principal faults, *viz.*, (1) Inefficient spur, (2) procidentia, and (3) mortality from restoring the continuity.

Fig. 4.



Showing application of the first two sutures to be applied when stitching the loop into the abdominal wound. They hold the upper margin of the spur level with the skin surface.

In performing colostomy an incision is made one and a-half inches long, two inches inside of the spine of the ilium, crossing at a right angle a line drawn from the anterior superior spine to the umbilicus. A sterile pad is introduced to protect the intestines, and the parietal peritoneum is stitched to the skin. When the colon is identified, it is drawn through the abdominal wound until a loop *twelve inches* long is exposed. If the anus is to be permanent, the loop is acutely flexed upon itself and a running suture of silk is placed along the line midway between the mesenteric and convex border on both sides, beginning at the apex of the knuckle and extending for *six inches* down the two limbs of the flexure, thus approximating the two serous surfaces and *folding the mesentery in between the limbs to stiffen the spur.* The sutured loop is then dropped back until the point, as shown in Fig. 2, is level with the skin surface. A stitch is passed through the skin into this point back through the skin and tied (Fig. 4). This must be carefully and accurately inserted. The suture is repeated on the opposite side. The gut is now stitched in the abdominal wound with a running suture of catgut. Catgut as a material for suture in this operation is to be preferred to silk, as the latter is hard to find among the granulations when the time comes for removal, and, by capillarity, it infects the stitch-holes, giving rise to pain and sometimes abscess.

After an interval of forty-eight hours, if waiting is permissible, the protrusion is snipped off with a pair of scissors nearly level with the skin, cocain anesthesia being required. We now have a spur so stiff and rigid that it cannot be dragged below the skin level, and no feces, either solid or liquid, can pass into the lower portion. In a few days the plastic exudate around this fortified spur has so thickened that procidentia is prevented.

If the artificial anus is to be temporary and subsequent closure of the colostomy wound is desired, the line of sutures approximating the two limbs should be inserted *like those given for anastomosis*, which does not fold in the mesentery, and when ready for restoration, the spur is simply divided along its median line for four inches, as directed for anastomoses (Fig. 3). When the abdominal wound is closed we have a perfect and ample anastomosis between the proximal and distal portions of the colon.

Byrd's method for closing the abdominal wound is as follows:[2]

> "The skin on each side of the opening is caught up in a fold, in such a manner that the top of the folds meet easily over the opening of the bowel; an incision along the top of these folds, which is about three-quarters of an inch from the opening in the bowel, is then made through the skin and superficial fascia, and extended so as to form an ellipse enclosing the opening. That portion of the skin next the opening is then dissected up from the outer side, leaving it attached at the inner side to the opening in the bowel; it is then inverted and turned into the bowel. This procedure brings the raw surfaces in apposition, and throws the skin into the bowel, so as to form a

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[2] "Kelsey's Diseases of the Rectum and Anus."

continuation of the mucous membrane. The skin on either side of this elliptical raw surface is now brought together by passing two stay sutures, with a shot and shield, back about an inch from the cut edges, and making traction. This brings the edges together and makes them rise from the abdomen like an inverted V. Where the skin meets at the apex of the V it is fastened with a catgut suture. The portion of the skin in the intestine is shaped like a V, and that outside has its apex immediately above the apex of the lower one. By this procedure fully an inch and a half of raw surface is brought in contact over the opening in the bowel, thus almost insuring sufficient adhesion, while the V raw surfaces of the skin that is inverted into the bowel act as a valve, and are held in apposition by the pressure of the contents of the bowel."

I have used this method of making the spur in one case, but, as yet, have not had the opportunity of attempting restoration of the gut.

L. M., Chicago, a jeweller, sent to me by Professor A. R. Robinson, was suffering from a recurrent tumor of the rectum which had been diagnosed as sarcoma. He had been operated on three times, with prompt recurrence each time. When I saw him the anal sphincters and rectum, for a distance of three or four inches, had been removed. The growth had recurred and involved the tissues around the outlet, as far up as the end of the severed gut. Believing it to be sarcoma, and further attempt at local removal unadvisable, inguinal colostomy was proposed and consented to. On July 15, 1896, at the New York Polyclinic Medical School and Hospital, I did the inguinal colostomy and constructed the spur in the manner just detailed. Up to this date no procidentia has occurred, and absolutely no fecal matter has passed beyond the opening. Dr. Robinson has since removed the growth by medicinal means, in spite of the fact that the diagnosis was that of sarcoma. The patient, however, prefers to keep the artificial anus, as the anal sphincters have been removed.

The additional operation of closing the abdominal wound, advanced as an objection to the method, could scarcely be defended if mortality is lessened. In this regard it is highly probable that the free and ample anastomotic opening, secured by dividing the septum for four inches, would permit the artificial anus to close by granulation, and if division of the spur could be accomplished without general narcosis, a second operation would be unnecessary. Liability to ventral hernia is an objection anticipated, but it is a matter of minor import compared to the saving of life. It is probable that no perfection of the technic of colostomy will ever make it acceptable to either surgeon or patient as a permanent substitute for the natural outlet; but, if the dangers of closing it and restoring the continuity of the fecal current can be obviated, the operation will have a wide field of application in those acute lesions of the intestinal tract in which temporary physiological rest would prove curative.

STENOCARDIA (ANGINA PECTORIS).[1]

By H. NEWTON HEINEMAN, M.D.,
OF NEW YORK.

IT is unfortunate that a celebrated man like John Hunter, the anatomist, should have been among the earliest in whom the disease of angina pectoris was clearly recognized. The intense symptoms from which he suffered have ever since been considered as essential to a correct diagnosis, and our knowledge of this affection has thus been much retarded. Then, too, the difficulties in recognizing small, yet important, lesions macroscopically, and those besetting even histologic work have been additional factors in delaying a fuller appreciation of the conditions underlying it. Often, indeed, stenocardia appears to be a symptom, but it is certain that time will confirm the claim we make that it deserves a special place among the cardiac disorders. In some cases we meet with markedly advanced cardiac and valvular disease and atheroma of the vessels, entirely without the symptoms of cardiac pain and its accompaniments, whereas in other cases we may be unable to recognize any marked lesion, and yet decided symptoms are present. That a definite cause must exist for such marked symptoms needs no argument, the important issue being the determination of the essential cause.

History.—Chirac, more than 150 years ago, tied a coronary artery. Morgagni observed calcification of the coronary artery, and referred to Crellius and Thebesius as having done likewise. Rougnon and Heberden recognized the symptoms of the disease, the latter calling it stenocardia. Jenner and Parry associated the symptoms and the lesion, Jenner making the diagnosis of Hunter's malady in 1793. In more recent times, Marshall Hall, appreciating the relations between the coronary-artery circulation and sudden cessation of the heart's action, gave utterance to views which were followed up by Erichsen, who, in 1842, devoted himself to experimental research upon the problem.

The labors of v. Bezold, Breymann, Samuelson, Cohnheim, v. Schulthess Rechberg, and Bettelheim, of Panum, G. See, Bochefontaine, and Roussy McWilliam, and by no means least, of our own countryman, W. Townsend Porter, have made more clear the physiologic relation between the coronary circulation and the action of the heart muscle. The contribution made by me to the distribution of the coronary arteries may possibly throw a little additional light upon this subject.

First, a few words as to the anatomy of the cardiac circulation. Having established the fact that the coronary arteries frequently terminate in comparatively large trunks, and, secondly, that the capillaries come directly from large trunks, and that the capillaries, by reuniting in little congeries, form regular reservoirs from place to place between the muscle-fiber and fasciculus, and that the anastomosis takes place between the capillaries, we can appreciate the fact that interference with a larger artery means interference with an enormous extent of capillary surface.

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[1] Delivered before the Section on General Medicine, New York Academy of Medicine, November 17, 1896.

Porter's experiments have proven that experimental interference with the coronary circulation gives rise to changes in intraventricular pressure, causes fibrillar muscular contractions, and even brings the cardiac muscle to a standstill. Still further, that the intraventricular pressure and the character of the contraction and relaxation in one ventricle may be speedily affected by ligation of a coronary artery supplying the other ventricle.

Etiology.—In seeking for the cause of the condition, it becomes quite evident that it must be looked for first in the heart-muscle, secondly in the coronary arteries, and thirdly in the nerve supply. Degeneration of the heart-muscle fiber, or of the muscular fasciculus, change in the cement substance, sclerosis and atheroma of varied degree of the coronary vessels, degenerative changes in the nerve-supply, functional disturbance of the heart-muscle from impaired nerve function, and reflex vasomotor disturbance of the heart have all in turn been found as factors in the causation of the symptoms.

But views have been as numerous as the authors who have written upon the subject, and naturally have varied according to the physiologic or pathologic experience of the writer. Osler quotes the old views of Allan Burns, readopted by Potain, that the anatomical condition is one of transient ischemia of the heart-muscle, because of disease and spasm of the coronary arteries. Thoma speaks of sclerosis or thickening of the coronary arteries always being present. Heberden looked upon it as heart-muscle cramp. Traube, and many following him, Tyson among the recent ones, considered it the result of an acute cardiac muscular dilatation causing great tension of the ventricular walls, associated with diseased coronary arteries. Wood and Fitz speak of the cardiac dilatation being a result in cases in which the disease has existed for years. Lauder Brunton, in a very recent article, accepts the brilliant simile and explanation of Sir Grainger Stewart, who speaks of two factors—the heart and the arteries. If the arteries are diseased, and so resist the entrance of blood, we have pain from pressure on the nerves in the more elastic arterial walls or from cardiac overdistension; if, however, the heart is too feeble to drive the blood into arteries that are sufficient, we have cardiac overdistension from its own muscular weakness. In brief, Stewart says: "Believing that both cardiac weakness and more or less change in the arteries coexist, cardiac pain is generally due to weakness of the heart in proportion to the resistance it has to overcome." The reflex effects of the nervous system have long been recognized. Charcot has long since demonstrated that in gastric crises the heart is affected. Franck proved that the nervous terminal twigs of the aorta, when irritated, affected the heart and respiration.

The effect of mental emotion in disturbing the heart and vessels has been forcibly illustrated in the cases of the kidnapped slaves of Livingstone, many of whom died broken-hearted. An example equally pregnant is the following:

X., forty-eight years of age, an industrious porter, with healthy heart, was examined by me daily before and after his day's work. After continuing this for five weeks, I found that, on a certain evening, the transverse diameter of the heart had increased more than 1¼ inches as compared with the measurement of the morning. This difference exceeded any I had ever noted as the result of work. Upon questioning the man, he told me he had done only a very moderate day's work, but that just prior to his coming to me he had had a wordy quarrel, which excited him somewhat.

The case of a literary man, who suffered from cardiac disease and occasional attacks of stenocardia, is of interest. He found that at times when he worked under mental pressure he would have slight precordial pain radiating into the left arm. Upon recommending him to work less unremittingly, he reported that if when the pain came on he ceased work, or worked with less intensity, it instantly abated.

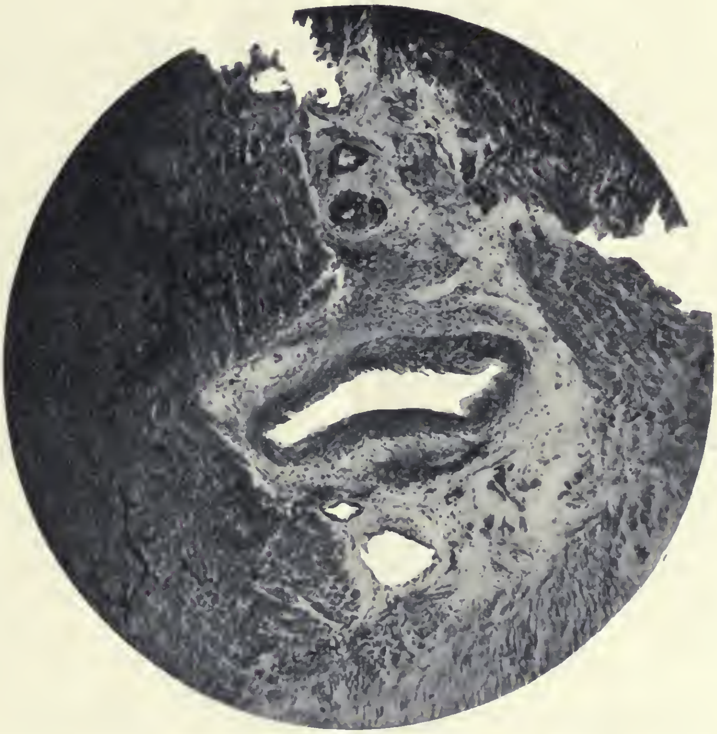
Sexual intercourse is often an exciting cause, and we can appreciate our own responsibility when the question of coitus between husband and wife is to be decided by our opinion. Even the taking of an ordinary meal may excite an attack, and the digestion of a small quantity of milk may even be the exciting cause. It is a well-known fact that persons suffering from gouty kidney, and hence from increased arterial tension, often have attacks of stenocardia. It appears, therefore, that all causes which tend to increase intra-arterial tension, and which tend to relax the heart-muscle or cause the organ to act spasmodically, or to contract irregularly, and thus produce dilatation or weaken the force of the heart's action, or causes which call upon a weakened heart to overcome sudden and even ordinary exertion and, finally, causes interfering with the proper nerve-control of the heart and blood-vessels will produce the attacks. To this last group the so-called Nothnagel category of stenocardia vasomotoria belongs, and, at times, Jacob's angiospastic cardiac dilatation.

The various exciting causes of the symptoms of the disease demonstrate that the spinal cord, through its motor and sensory branches, the cerebrum, the pneumogastric, the cardiac and celiac plexuses, and, at times, the vasomotor system, are the avenues along which the effects are carried.

The ideas heretofore held that in cardiac failure of every kind the liver, spleen, and kidneys become the subjects of slow engorgement is still true, but it is not the entire truth. In the first place, we must accept the fact that the heart in health is liable to slight variations in size and shape. In disease, this change becomes more marked. But the liver and spleen are likewise subject to these changes. For several years Schott and numbers of his friends, myself among them, have maintained that in a number of cases in which the heart was seen to get smaller after exercises and baths, the liver likewise diminished in size. Recently Heitler[1] of Vienna has demonstrated, and so confirmed the fact which has so long been contended for by Schott, that there are not only coincident changes in the volume of the heart with the volume of the pulse, but also changes in the volume of the liver and spleen with those of the heart and pulse. Heitler found that when the pulse was small in volume and the heart was large, the liver and spleen were large; and with a larger pulse- and smaller heart-volume, the liver and spleen were smaller in volume.

Pathology.—We find thickening, atheroma even to calcification of the coronary arteries and their capillaries, similar degenerative changes in the arteries of the body and changes in the heart-muscle and the cement substance varying in degree and extent. In a few instances, changes have been found in the sympathetic cardiac plexus and pneumogastric branches. I am certain that these latter cases will in time be increased in number, and the etiology be cleared up in a considerable number of cases in which the muscular and arterial lesions are found to be so slight, and yet in which the symptoms were so pronounced during life. I will be pardoned, however, when I digress to say that after death the macroscopic examination of the heart should never be relied upon alone, but a thorough microscopic examination should be made as well; and it is essential for the success of the latter that the heart-muscle be as fresh as possible, and that more than usual care be taken for its proper preservation. Injection of the coronary arteries will add materially in facilitating the study of how far the lumen of the artery is encroached upon. As an ex-

FIG. 1



Section of Intermuscular Septum, showing thickened coronary vessels. (Prepared and photographed by the author.)

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[1] *Wiener med. Wochen.*, 1896, No. 13.

ample of such degenerative changes found in the arteries which could not be recognized macroscopically, I ask attention to Fig. 1. The patient had stenocardial attacks for years, and died at the *Hôpital St. Louis*, Paris, of chronic Bright's disease. The presence of aortic lesions is strongly dwelt upon by many authorities as being so often present that their share in the disease must be considered. Aortic lesions, however, are those of adult life, as a rule, and when mitral lesions are also present, they have usually been acquired in early life. While these lesions may have preceded the symptoms of stenocardia by many years, the reverse also holds true, for as the suffering patient grows older, valvular lesions may gradually make themselves manifest, and may be the result, rather than the cause, in some cases. During the life of a patient, if examination reveals cardiac valvular lesions, or thickened or sclerosed arteries, or myocarditis, or cardiac arrhythmia, by which we can infer disturbed functional activity, the pathology is cleared up. In some cases I have found that an ophthalmoscopic examination of the fundus, by revealing degenerative changes of the arteries, or hemorrhages, aided me materially in arriving at a diagnosis when the lesion was little manifest in the superficial vessels. But in all cases of doubt the physician should apply the sphygmograph[1] and sphygmomanometer,[2] and, if need be, also the arteriometer,[3] before deciding that the vessels and heart are functionally and organically sound. It is not without reason that I say that a single examination decides nothing; several examinations, repeated at the same hour of the day on successive days, at the same digestive period, under well-arranged normal conditions of the patient, and in the same position, preferably that of lying down (sometimes when the pressure is feeble the uncertainty of the results compels the use of the sitting posture) should be made.

Symptoms.—It is generally agreed that men are more prone to these attacks than women, though I think the proportion in favor of men has been somewhat exaggerated. The ages between forty and fifty are those in which most men are attacked. Before entering upon the consideration of the symptoms, I must state that it is my firm belief that by far the larger number of cases of pseudo and hysterical angina are cases of true angina. When heart-pain recurs in its characteristic manner, and with some of its usual symptoms, my experience has taught me that sooner or later the signs become sufficiently certain for me to include the case under true stenocardia, and this in a considerable number of cases in which, *at first*, the usual examination gave no indication of real lesion. For me a patient must have a clear history of hysteria preceding or accompanying the attack of heart-pain, and have been under observation for some time before I, from a negative standpoint, place the case in the pseudo-angina category.

Again, it has been customary to consider as genuine cases only those in which the symptoms of pain were marked and unmistakable. For me, the mildest symptoms characterize a considerable number, or the early stages of a number, in whom lesions may be recognized with difficulty, or not at all, for a time. Experience has, in a certain number, made the lesion clear, after several years of observation. Next, as to the ultra-severe cases, it has seemed necessary to some authorities (Nothnagel and others) to place in a separate category the cases in which the severe general vasomotor disturbances occur. Such cases have been denominated cases of angina vasomotoria. To me, these are only cases with unusually severe complications, or else severe forms of the disease. While allowing for exceptional cases of pseudo and hysterical stenocardia, I prefer to include all cases, mild or severe, with feebly or fully developed symptoms, and with or without vasomotor disturbances, provided examinations, properly made, give us changes in arterial tension, or other vascular or cardiac functional or organic changes, as true cases of stenocardia.

The first and most marked symptom we must consider is pain. However, this must be differentiated from intercostal, neuralgic, and rheumatic pains, and from pain resulting from various accidental causes. The pain is sometimes simple discomfort; again a sense of oppression or compression, varying in degree and severity; sometimes sharp and lancinating, sometimes like that of a sword pushed through the sternum and back; sometimes there is a feeling of unbearable weight, accompanied at times by a sensation of cold in the same region; sometimes there is a feeling of distension or bursting within the chest, or, again, a sensation of burning. This most pronounced symptom of stenocardia, however, is usually referable to the heart, but not always beginning or ending in the heart, and sometimes, by reason of greater intensity at other points, is not clearly appreciated as a heart pain.

In the mildest forms, the pain usually begins over the epigastrium, the lower end of the sternum, or the mid-mediastinal space, and from here it passes upward toward the neck and to the left arm, terminating at the left shoulder, elbow, or one, or several, or all of the fingers. At times it radiates into the right chest and right arm also, or, passing downward, radiates toward the abdomen. As the attacks grow in severity, the accompanying symptoms grow in intensity. The feeling of constriction or fulness of the throat becomes almost a choking one, and the sensation of compression of the chest and epigastrium becomes absolutely unbearable from a sense of superhuman weight to be overcome. The sharp pain appears like that of a sword-blade, with the hilt pushed against the chest, the handle even being twisted about to intensify the suffering. Anxiety and restlessness, a sense of fear even of some impending catastrophe and death, pallor of the face and coolness of the extremities, followed at times by irregular suffusion of the face, and sudden, profuse perspiration, and even loss of consciousness supervenes. The fingers of the left hand, sometimes the entire left upper extremity (less often those of the right hand or extremity) become numb and useless for a time. The attack may become modified, the pain being more bearable for a short time, and then may return in full force, continuing in this way for from one to several days in very rare instances. Usually the attacks last from a few seconds to a few minutes.

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[1] Dudgeon's. [2] von Basch's. [3] Oliver's.

In persons subject to the attacks, pulmonary congestion, with expectoration of frothy, bloody mucus, lasting from a few hours to days, may occur.

Examination of the heart may reveal no irregularity, but even in such cases I have always felt that the heart seems to be acting against depressing influences; its action is not free as it should be. In characteristic cases, the heart beats irregularly, sometimes tumultuously, with alternate feeble and strong beats, very suggestive of the condition of fibrillar contraction of the cardiac muscle. At times it seems to beat feebly, being almost arrested in its action, then beating irregularly, and gradually returning to its previous condition. Less often there is simple tacchycardia, with feeble beats. The pulse, as already said, may indicate nothing; again, it may be small and thready, or may indicate increased arterial tension, or may be irregular and slower, or even faster. In cases in which the attack goes on to a fatal termination, syncope soon supervenes, the heart gets feebler, edema of the lungs, with cyanosis and coolness of the surface, follows, and, with the usual symptoms of this complication, life quickly ebbs away.

Beyond these usual phenomena, other more marked vasomotor disturbances may occur. Thus the symptoms described under the separate heading of "Angina Vasomotoria of Nothnagel" may be superadded to the ordinary symptoms. As a rule, the symptoms are associated with attacks produced by exposure to cold. We have general spasm of the peripheral vessels, pallor, cyanosis, and subnormal temperature, and a sense of stiffness and inability to use the extremities. At times faintness or unconsciousness follows. This condition, supposed to depend upon diffused spasmodic contraction of the peripheral arteries, is found, according to the author, in cases in which the pulse remains regular, and there are no signs of cardiac disease.

There is still another form of vasomotor disturbance which may or may not be associated at times with cases of stenocardia, and that is the form called by Jacob "angiospastic cardiac dilatation," in which any of the internal viscera, the liver, spleen, kidneys, or lungs in most cases, may be the seat of engorgement. The kidneys, if not the principal seat of the lesion, sympathize with the system, and the albumin and casts temporarily eliminated show their passing congestion if nothing worse. There may be signs of pneumonia or pleuritis, which disappear in a few days, and there may be some edema. The temperature is slightly elevated. The condition may last from a few hours to a few days. The heart is usually acutely dilated, even when dilated before. The pulse is, of course, small. This condition may assume all forms, from the mildest to one threatening the life of the patient. In very mild cases, engorgement of the liver or lungs, when slight, is overlooked, and frequently in severe cases the condition is mistaken for acute infection from old ulcerated valves or chronic endocarditis. The life history of these cases is exceedingly variable. Some few patients never have but a few attacks, and die in an attack of moderate severity. A small number after having been subject to a few attacks remain well, and years after upon the first return of an attack of greater severity succumb to the attack. In a fair number of cases, which number is now being increased, the attacks are induced to subside, and the patient enjoys years of freedom. In others the attacks may last for an indefinite number of years; in some, slowly increasing in severity, in others varying to and fro, the patient's life being dependent upon his general cardiac and constitutional condition.

The treatment of the patient may modify the career of the disease, and the occupation of the patient may be such as to intensify it. If the sufferer cannot avoid the mental or other exciting causes of the disease, the symptoms and number of the attacks will be dependent really upon the exciting cause, rather than upon the lesions and underlying causes. And it is this psychical element that is largely responsible for making cases appear so contradictory as concerns symptoms and lesions. Prodromal symptoms exist in quite a number of cases. Frequently a feeling of fulness or slight sensation of pressure or discomfort or sense of uneasiness is felt in the epigastrium, lower or midsternal regions, before the symptoms of stenocardia set in definitely. Many patients recall that these irregular and uncertain sensations existed for months or years, appearing at long intervals for a few seconds at a time, long before they became the subject of stenocardial attacks. It becomes an open question whether such prodromal symptoms may not really be part of the attack itself. But in many instances, by resting or resorting to medication, or by getting the body warmed if it has been chilled, or getting rid of the exciting cause, whatever it may be, the real symptoms are averted, or if too late to abort the attack, it is made more moderate.

Diagnosis.—The seat and character of the pain and remaining symptoms, especially if arterio-sclerosis, with or without cardiac valvular disease, exist, makes the diagnosis certain. If cardiac disease is not present and there is increased arterial tension, the diagnosis is not difficult. In gouty subjects, even if the heart is not apparently involved and the arteries are thickened or pressure increased; and even if there be no apparent change in the arteries, gout with characteristic symptoms is very suspicious of stenocardia.

In all forms of myocarditis, whether primary or even secondary to renal disease, the symptoms should be considered as strongly indicative. Hypertrophy with or without dilatation of the heart, and especially cardiac dilatation, makes the diagnosis fairly certain.

The occurrence of the symptoms in men over forty years of age, more especially with aortic disease and arterio-sclerosis, is a combination of conditions that makes such symptoms especially significant and unquestionable. In cases in which the symptoms are as yet few, and the finger and ear cannot detect changes in the arteries and heart, the diagnosis should be kept in abeyance until the sphygmomanometer, arteriometer, and sphygmograph have been brought into requisition. It is a question I have not yet decided as to how far the capillary pulse instrument will be useful, but it appears to me that in time with perfection of the apparatus, it should have great value.

The differential diagnosis from that rare form of stenocardia due to the use of tobacco must be based upon the history of the patient and the peculiar cardiac condition accompanying chronic tobacco-poisoning. In a case of cardiac valvular disease, the differential diagnosis would be difficult. If, however, such a patient smoked so much as to make himself liable to stenocardia, the probability is that the symptoms would be indicative of true stenocardia; however, he might coincidently suffer from tobacco-poisoning.

The differential diagnosis which Huchard makes between true and pseudo-stenocardia, is for the most part untenable, and I feel certain that in following tradition he has adhered to the arbitrary division so long made by other equally great authorities. To maintain that "spontaneity," being "often periodical or nocturnal," "pain less severe," "sensation of distension," "duration one or two hours," are essential features belonging to the pseudo types, is by no means in accordance with fact, for true stenocardia may be characterized by the same symptoms. The occurrence of attacks in a young woman of an hysterical temperament, free from cardiac disease, taken in connection with a lack of the usual succession of symptoms but with the existence of dyspnea, favors the diagnosis of pseudo or hysterical stenocardia.

Prognosis. — The prognosis depends upon the nature of the cardiac lesion and condition of the blood-vessels, and upon the severity of the attacks. Patients may go on having fairly severe attacks for years even with extreme lesions, while in other cases moderate attacks prove fatal. Balfour relates a singular case, but it was in the person of an old man who, having had an attack, was free for ten years and succumbed to the next. In seeking to fix the future of such cases it is wisest first to determine how far the patient's condition and attacks are amenable to treatment, for much depends upon the vascular and cardiac condition, and the ability to moderate the attacks. But even in desperate attacks with edema of the lungs, we must seek to keep up the heart's action until the edema has subsided, for the spasm may have passed off and the patient's only danger be from the effects of the edema.

The patient's environments and the extent of his means to purchase comforts and save himself from the injurious effects of work, temperature and surroundings are additional factors that tend to regulate the probable length of life. Considering the large number of persons so afflicted, the prognosis while earnest should never be made too grave.

Treatment.—The treatment should be regarded under three headings, (1) prophylaxis, (2) general treatment, and (3) of the attack itself.

Prophylaxis.—A great many attacks are excited by the influence of cold. The avoidance of cold water, and even of tepid water to any large surface of the body on account of the succeeding chill, must be advised. Such patients must wash their bodies one part at a time, and have that part well dried and covered before proceeding to the next. Even the keeping of the hands well gloved, maintaining warm feet, protecting the mouth and nose from the sweeping cold wind or air are precautions that will save the patient from many an attack. The regulation of the patient's life and habits come under this category. Avoidance of mental worry and emotion, of over-exertion, and even needless exertion at times, is imperative. The patient must walk with deliberation, and the combination of talking and walking may be too great a strain for the heart until it is improved by general treatment. Tobacco should be absolutely interdicted, and all spirituous liquors as well. In persons who have always taken wine, a small quantity of a light Moselle or claret, preferably Moselle, may be taken diluted at dinner or, exceptionally, if the patient feels weak and in need of it. Over-indulgence in food must be guarded against. If the patient has the prodromal symptoms of an attack, the seeking of shelter, of a warm room, of warmth to the surface, or resting or lying down, may ward off an attack.

General Treatment.—This must have two objects, first, the improvement of the heart and blood-vessels, and second, the relief of engorgement in the internal viscera and capillaries.

For the improvement of the heart and blood-vessels, the use of potassium or sodium iodid in from 3- to 5-grain doses kept up for months is an old remedial agent of a certain, though not always satisfactory, value. The treatment by saline baths and by the Schott method of exercises, has a most potent effect in improving the condition of the cardiac muscle and vessels, and appears to have a direct effect in making the attacks less numerous and severe, and even in causing them to cease during a period of months or years.

The exercises with resistance or Schott movements should be carried out in the way indicated by me in a previous paper before the general meeting of this Academy. The movements are made in such a manner that the attendant can easily resist or hinder the movement, and the patient in seeking to complete the movement must overcome the resistance of the attendant. The movements must be made with especial care and caution in these cases, and the resistance at the outset must be at a minimum.

The artificial saline baths should contain from one to three per cent. of salt, and from one-fourth to one per cent. of chlorid of calcium, and should gradually be strengthened by the addition of carbonic acid. By a process now in the last stages of completion, it will be possible to prepare the saline effervescent and saline effervescent flowing baths by means of a simple apparatus, so that the carbonic acid will be intimately mixed with the water. Details of the manner of administering the baths and exercises for this and other cardiac conditions will appear later.

For the relief of visceral and capillary engorgement we may resort to medicinal agents. Although the baths and exercises do this to a marked extent the administration of a half-grain of calomel (well triturated) thrice weekly at bedtime, succeeded the next morning by a dose of Carlsbad sprudel salts, adds materially to the effect.

After the visceral engorgement has been much relieved, we can now use our nitrites, and, in some cases, nitroglycerin; for until visceral congestion is relieved it is only playing hide and seek to try and relieve the capillaries which are immediately clogged again by the nearest congested viscus. Having accomplished this, we will now find the cardiac tonics, spartein, strophanthus, strychnin, valerian, and, in suitable cases, digitalis, of the greatest utility.

The general tendency to anemia and defective oxygenation must never be lost sight of, and general tonics, including the use of oxygen gas, as recommended by A. H. Smith, will be of excellent service.

The Attack.—The treatment of the attack, includes the use of nitrite of amyl in from 3- to 5-drop doses, poured upon a handkerchief, or taken from a glass pearl in similar manner, and inhaled.

The use of nitroglycerin in 1–100 grain doses is of less rapid efficacy. It may be repeated once in three or four hours, or at even longer intervals. In a severe attack it may be given at half-hour intervals, but should be given guardedly. In some patients the effect of nitroglycerin is immediate, in others very slow. Hypodermatic injections of morphin, with or without atropin, is often of great service.

The use of ether or chloroform, with or without valerian internally, relieves moderate spasm, and is somewhat stimulating. Local counter-irritation—by issue, sinapism or blister over the precordium, or the actual cautery over the precordium, or applied over the hepatic region in some cases, and the application of electricity, may be resorted to. Sometimes the local application of the hot water bag is of service. Exercises given with extreme caution has in my own hands sometimes given some relief to the acute symptoms.

To recapitulate, I wish to emphasize that the treatment should not be haphazard, but *systematic*, if we would accomplish anything; and considering the suffering entailed by this disease and the danger involved, such attention upon our part is essential and called for.

First we must remove *exciting* causes of every kind, and next relieve the visceral engorgement that has long existed because the heart was too weak and the vessels not elastic enough to keep up proper venous circulation, and, having gotten rid of the vis-a-tergo, we relieve the capillaries by appropriate remedies and coincidently stimulate the heart, which can now act better because its capillary embargo has been raised. The success of the treatment depends upon the following out of the sequence just suggested. The comfort to be guaranteed to the patient, and the prolongation of life, are sufficient rewards for patient toil and scientific interest. I add a few cases taken at random from a large number, illustrative of the manner and results of treatment.

Case I.—A. S., aged fifty years, a Russian, came to Nauheim in the summer of 1895. Family history negative. Had syphilis. In 1875 had severe rheumatism and marsh fever. Lived in Sardinia. In August, 1893, had his first attack of angina. Diagnosis of stenocardia by Professor Müller of Budapest, by whom he was put upon iodid. In October, 1893, iodid was stopped, and patient ordered a cold-water cure at Budapest. He grew worse, and the treatment was discontinued. He went to Professor Oser, in Vienna, who said he had gastric trouble. In November, 1894, was seen in Vienna by Abeles and Nothnagel. Nothnagel recognized his cardiac disorder, diagnosticating gallop-rhythmus with myocarditis. Next saw Professor Muri of Bologna, who renewed the iodid treatment. The prolonged iodid treatment and his illness had made him profoundly anemic. He now suffered from constant attacks of angina most of the day. The attacks came on after every meal and every movement. Even while asleep he would not be entirely free from them. The simplest food—even milk—caused an attack. Finally they became so intense that the patient often became hysterical and cried with agony. During this time he was in bed for months. He noticed that if he yawned severely he got relief. Pain usually began in the epigastrium, then went upward and across the chest into the left arm and hand and over the left shoulder slightly; it rarely went into the right side, and if so, was not so severe. In February, 1895, he consulted Dr. Secchi and others in San Remo, For two months previously he had been again in bed and taking iodid. Secchi now stopped the iodid and ordered strophanthus during April and May, 1895. Nothnagel came to San Remo in May, 1895, and advised him to go to Bad-Nauheim as a last resort, and in July he came there.

From July 4th to 14th he was given nine saline baths at a temperature of 32° to 31° C.; duration eight to eighteen minutes. From July 16th to 30th there were administered twelve effervescent saline baths at a temperature of 31° C.; duration eight to twenty minutes. August 1st to 12th he took nine effervescent flowing baths at a temperature of 29° and 30° C.; duration twelve to twenty minutes. To the saline baths from one to two liters of *mutterlauge* had been added.

After the first week daily exercises with resistance were given. He made a complete recovery to the extent that all the angina attacks disappeared.

In August, 1896, he returned to Nauheim and reported to Dr. Schott that he had remained free from attacks, barring a slight suggestion of an attack in the shape of mild prodromal symptoms. He had taken no treatment of any kind meanwhile.

He repeated his treatment in the summer of 1896, and in the fall reported himself, in a letter to me, as being free from every symptom.

Case II.—X., aged forty-three, American, came to Nauheim in the summer of 1896. Family history: Father died of cerebral apoplexy. Mother has cardiac disease. Sister died of chronic Bright's disease.

Patient never had had rheumatism or syphilis, and was well up to three years ago when he began to complain of dyspnea on exertion, had precordial discomfort, and was anemic.

Six months ago began to complain of attacks of angina, which came on by day and by night. Attacks occurred at times without apparent cause, and always under the influence of cold. Diagnosis of aortic stenosis had been made in 1893. After two weeks of saline baths with *mutterlauge* (1 to 3 liters), temperature varying from 33° to 31½° C., the attacks ceased, and up to November, 1896, had not returned.

Case III.—X., aged sixty-one years, native of Batavia, came to Nauheim in 1895. No history of rheumatism or syphilis. Excessive smoker. For years patient had worked under pressure in a hot climate. He maintained good health until he suffered severe shocks from family bereavement. He then began to complain of vertigo and headache, and of malaise, weakness, loss of appetite, and marked dyspeptic symptoms. He suffered from attacks of cardiac arrhythmia, which were followed by a sensation of faintness and slight syncope. He had more or less sharp and lancinating pain in the precordium, going into left shoulder and passing down to left elbow. This pain was brought on by any exertion or slight excitement. The noises of his beating heart awoke him at night. Examination revealed aortic disease (stenosis and insufficiency), and although he discontinued smoking upon his doctor's advice, he did not improve. He left Java and came to Holland in the winter, and rested in Holland for four months, where he was treated without result. After this treatment, in the summer of 1895, he came to Nauheim suffering as before. Examination revealed an intermittent arrhythmical heart, myocarditis, and general atheroma, aortic stenosis and insufficiency. Patient complained of angina, dyspnea, and symptoms as above, and was unable to walk without distress.

After six weeks' treatment by baths alone his symptoms disappeared. It was noted that whereas before the individual bath his pulse was 80 to 82, afterward it was 66 to 68. He remarked to me: "I am wonderfully better." He was able to go about without pain, and his heart had become reduced from 15 cm. to 12½ cm. in its greatest transverse diameter. The improvement was maintained throughout the winter of 1895–1896, and in the summer of 1896 he returned to Nauheim and repeated the treatment. He left in most excellent spirits and with no symptom of discomfort.

Case IV.—Miss X., aged thirty-six, school teacher, German. Mother subject to chronic gout. At seven years of age patient had had pleurisy and periostitis of left chest. Fairly well till her sixteenth year; became anemic, and for two years had epileptic attacks. Then suffered from chronic bronchitis for two years, with a slight return of epilepsy. Was profoundly anemic all this time, and suffered from chronic malarial poisoning. Menses appeared (but scanty) at nineteen years of age. From her twentieth to twenty-eighth year she was anemic and continued to have constant headaches, pains in joints, and swelling of legs. When thirty-one years of age she suffered a sudden shock, from which time her heart's action became intermittent and she had a frequent sense of intense precordial pain. She was examined in 1891, and a distinct mitral regurgitant, together with a double basic murmur, was recognized.

She reported that in the spring of the year her cardiac symptoms were always most severe. The heart action was always most intermittent at that time, so as to make her feel faint very often during the day. She could not sleep, and the precordial pain was accompanied by the sense of impending danger and death. She tried rest and mountain air for three summers, with only temporary improvement.

She came to Nauheim in 1894.

From July 7th to 29th she took fifteen thermal saline baths, temperature varying from 32½° to 32° C.; duration, ten to twenty minutes.

From July 30th to August 6th she took six thermal effervescent saline baths; temperature, 31° C.; duration, eight to twelve minutes.

Although she left Bad-Nauheim, having gained eighteen pounds in weight, yet the conscious improvement began only a fortnight after she reached her home. She remained well the entire year, passed the spring without any symptoms, and when I examined her in July, 1895, she had a feeble mitral regurgitant murmur, but a perfectly regular heart.

She repeated her treatment the next year, 1896, and reported herself able to go about her duties all the year without hindrance.

IRITIS AND ITS TREATMENT.[1]

By LOUIS F. LOVE, M.D.,
OF PHILADELPHIA, PA.;
OPHTHALMIC SURGEON TO ST. MARY'S HOSPITAL, TO THE HOUSE OF THE GOOD SHEPHERD, ETC., PHILADELPHIA.

It is not my purpose this evening to go into the different forms, nor to enter into a study of the etiology of the various kinds of iritis, but I desire to call the attention of the Society to a case of simple plastic iritis recently treated at the eye clinic of St. Mary's Hospital, not on account of its rarity, but because its history is typical of a number of cases of neglected disease which are seen at every hospital.

G. D., aged thirty-two, came to the clinic, March 17, 1896, with the following history: Always had good vision until one week previously, when he awoke one morning with considerable pain in the right eye and intolerance of light; nevertheless, he managed to work that day and the next, his eye being protected by a shield. On the evening of the second day, the pain being then very great and the eye greatly congested, he applied to an apothecary who gave him some drops, presumably sulphate of zinc solution. It is needless to say that the drops aggravated all the symptoms, and after two visits to the apothecary, he came to the eye clinic at St. Mary's Hospital.

On examination a typical case of iritis was found, the iris firmly adherent to the anterior capsule of the lens, the anterior chamber filled with flaky lymph, and the media so obscured that it was difficult to see the fundus. No deeper inflammation had, however, as yet set in.

As I have said, this history is not at all unique, and I am sorry to add that it is not always apothecaries who commit these blunders. Yet of all the inflammations to which the human body is liable, iritis should be the one most readily recognized. The whole progress of the disease is exposed to view and the symptoms are characteristic and well marked. Certain cases of iritis might be mistaken for more serious eye troubles, such as glaucoma, but there is no excuse for the mistake of supposing it to be simply a conjunctivitis or "cold in the eye," as was apparently done by the worthy apothecary in the case which I have related.

The pain in iritis is very characteristic. It commences with a heavy deep pain as if the eyeball was being pressed upon by the fingers and this pain grows more and more severe as the inflammation progresses and is accompanied by shooting pains which usually radiate along the branches of the fifth nerve. Supra-orbital neuralgia is thus a prominent symptom, but it is accompanied by the deep pain in the eyeball itself. Gradually the pain becomes more and more neuralgic, intense paroxysms coming and going and increasing toward night. Frequently these are accompanied by flashes of light. All these symptoms are of intra-ocular pressure, and an active inflammatory process. The pain is totally different from that of any inflammation, however severe, external to the eyeball.

Not less characteristic are the objective symptoms. Before any lymph is thrown out which is apparent to the eye, the iris is discolored and contracted and begins to lose its power of movement; the pupil loses its shiny blackness, there is deep ciliary injection, and a dull appearance of the cornea. The immobility of the pupil is almost pathognomonic. If we exclude certain nerve troubles which in no other way resemble iritis, immobility of the iris and contraction of the pupil necessarily indicate some morbid process going on in the iris itself. When the disease has progressed to the formation of lymph and apparently the entire fixation of the iris, there can be absolutely no doubt of the nature of the disease, but even in the very early stages there is little excuse for a mistaken diagnosis.

I have referred only to the most characteristic symptoms. Photophobia which is marked is common to all inflammations of the deeper tissues of the eye. So, too, is injection of the conjunctiva, though to the educated eye there is marked difference in the congestion which accompanies iritis from that resulting from any other cause. It is so with the other symptoms set down in books. There is one condition, however, which may occasionally puzzle the physician who has had little experience in eye troubles. I have seen cases of glaucoma in elderly people which were complicated by an inter-current attack of iritis, and in these cases the symptoms of iritis are to a certain extent masked by the presence of glaucoma; and again, in inflammatory glaucoma there is frequently an exudate from the pupillary edge of the iris. While the acuity of vision is lost in both diseases, the decrease is much less in iritis than in glaucoma, and to the educated touch, as a rule, the tension of the ball furnishes a ready guide to diagnosis. The fact that iritis may occur during the progress of glaucoma should make us cautious in the treatment of the former disease in elderly people, where there may be a history of approaching glaucoma. In serous iritis we should also be on our guard, lest in curing the iritis we increase the blocking up of the canals of the ciliary body and thus increase the glaucomatous condition.

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[1] Read before the Phila. Northern Med. Soc., October 16, 1896.

In my opinion it is a matter of very little practical importance to determine whether an iritis is rheumatic, scrofulous, cachectic, or syphilitic in origin. As far as the treatment is concerned the same course is adopted in my practice, whether the patient confesses to syphilis or not. Of course, if iritis occurs during the progress of a rheumatic attack, or if there is a distinct history of rheumatism or gout, then remedies directed to these conditions should be employed, but taking the average case of iritis, with which we are all so familiar, the treatment should be conducted on the same general grounds, no matter what we have concluded the etiology to be.

The treatment of iritis has progressed but little since the early days of ophthalmology, and for the simple reason that if adopted early, the old fashioned treatment is eminently satisfactory. As in the days of our fathers, it consists essentially in the free exhibition of mercury, of local sedatives and derivatives, and in the free use of atropin. Mercury is best administered by inunction, the system thus rapidly coming under its influence. It should be remembered that the general condition of those attacked by iritis is usually poor, and that the stomach is not rarely irritable, and the digestion impaired. Internal medication should therefore be avoided as much as possible, except so far as is useful to build up the system and correct disorders of digestion. The use of mercury should be pushed to the point of tolerance. "Gently touch the gums," is the good old rule which is probably not very far wrong. Iodid of potassium is of little use in the earlier stages of the disease, but must be used after the inflammatory stages have passed, and when the mercury has been pushed almost to the point of salivation. If, unfortunately, your patient should object to inunctions, then some other form of mercury than the ointment must be used, the protiodid or bichlorid internally, or, better still, the subconjunctival injections as used by Abadie.

Local treatment to reduce the inflammation is very efficacious. I usually employ the Hurtelope or Swedish leech applied to the temples. Hot water fomentations applied to the eyeball are useful in allaying pain, and possibly in lessening the congestion, and should be freely used at frequent intervals and as hot as can be borne. A boric acid solution should also be employed.

But the chief treatment is the use of atropin, which should be administered both early and late, and in sufficient strength to thoroughly dilate the pupil, and at such frequent intervals as to maintain the dilatation. In the early stages the use of a solution of four grains to the ounce of the sulphate of atropin, applied every four hours, or even more frequently, is necessary to bring about this result. I have found good effects from combining cocain with the atropin in the earlier stages; it lessens the pain and aids in the more rapid dilatation of the pupil. After full dilatation has been obtained the cocain may be dropped, but the use of atropin, until all inflammation of the iris has disappeared, is absolutely imperative. In uncomplicated cases, which are seen at an early stage, the progress is very favorable. With neglected cases, complications are very liable to occur. The most simple is posterior synechia, which is altogether too frequently seen in eye-clinics, but it is unnecessary at this time to more than refer to the fact that most serious complications are more liable to follow neglect or maltreatment.

I have been greatly struck by the tolerance of mercury evident in many cases of iritis. I have seen numbers of cases which, as far as I could determine, were non-syphilitic, which bore readily the absorption of two to three drachms daily of mercurial ointment, for weeks, and even months, with no symptoms of ptyalization. In these cases, the mercury was continued until the eye whitened and the evidence of deep injection lessened. Mercury, in these cases, acted as a powerful tonic, the general health improving even more rapidly than the inflammation subsided, and it is in these cases that the most successful results are seen. I have already referred to the necessity, in many patients, of attending to the general health. As the majority of cases of iritis occur in patients whose systems have been run down by the presence of syphilitic or other poisons, the Turkish bath is especially useful, and tonic treatment should never be neglected.

In conclusion, I have only to impress upon you the facts that iritis is readily recognizable and is a most tractable disease if taken in time. The treatment is simple and effective, and there is no reason why nearly every case of iritis coming under competent care should not make a good recovery.

MENTAL COMPLICATIONS FOLLOWING SURGICAL OPERATIONS.[1]

BY J. T. WILSON, M.D.,
OF SHERMAN, TEXAS.

THE subject of mental disorders produced by or following surgical operations has not been discussed to any great extent, and until within the past few years only a passing notice has been given it. Dr. T. Gaillard Thomas reported six cases to the New York Academy of Medicine in April, 1889. He could find only twenty cases recorded previous to that date, and states that "prior to 1887 there was nothing in the way of literature on the subject." After Thomas called attention to this complication, quite a number of cases were reported, but I find in my investigations in this field very few complete histories accompanying these reports. This important part of the subject has been much neglected, and therefore a study of the literature is somewhat disappointing. The various mental disorders of traumatic origin, if I may use the expression, are not so rare as is supposed, and I presume every surgeon has met with cases during his career. They are sufficiently frequent to elicit careful consideration and special study in order that they may be prevented, or properly treated, when they have developed.

It is a strange fact that while surgical operations will sometimes cause serious mental disturbance, on the other hand, these same operations will sometimes cure them, and especially is this the case with some melancholiacs. Many females laboring under attacks of melancholia caused by some disease of the genital apparatus, have been cured when relieved of the physical defect by operation; others have been much improved, and yet others have received no benefit.

The question may very properly be asked, why a surgical operation should produce an attack of insanity. This can no more be answered satisfactorily in every case than can the question why some persons become insane from the many other causes to which it is attributed; for in most cases these mental complications are a surprise, and no good reason can be given why they should follow; in others, however, a logical explanation might be arrived at. If the patient is a high-strung, nervous individual, easily excited and unable to bear pain, the great and increasing dread of the anesthetic, or the thought of the operation, or both, will so affect him that he will lose control of the will-power, and the explosion will come after the operation and reaction from anesthesia. In many of these cases, probably a majority, there is an hereditary taint or a strong neurotic tendency. I think it has been the observation generally that females are more subject to these mental outbreaks than males, not because they cannot endure pain with equal fortitude, but because they are, as a rule, more nervous, more excitable, and more susceptible to the extremes of mental emotion. Nervous explosions, traceable to operations upon the female genitalia, are of comparatively common occurrence, because a greater number of operations are now performed in connection with these organs than upon other portions of the body; but this sequel is by no means confined to operations upon these parts. Polk has stated that he preferred not to operate upon patients who had previously shown an abnormal mental activity.

To anesthesia has been ascribed the cause of the trouble in some instances, but in these cases it is very likely that there is an insane temperament in the background. Anesthetics, too, may complicate the case by their effects upon various organs, which may combine with the other causes to produce a mental perturbation. Every anesthetic produces a more or less powerful depressing effect upon the heart. Cases are frequently recorded in which albuminuria has been discovered after chloroform and ether-anesthesia, the urine previously having been free from albumin. I have myself observed a hyperemia and torpidity of the liver, with febrile excitement and mental exaltation, following chloroform anesthesia. Chloroform and ether produce more or less anemia of the brain, or a venous stasis which may be very slow in being relieved; the patient may be feeble, and the delayed recovery from the effects of the anesthetic may end in confusional insanity. A very nervous person is liable to suffer from great dread of the operation, and often resists the anesthetic, or becomes wild and uncontrollable under the attempt to administer it. He often requires a greater quantity and it takes longer for him to become anesthetized, which has a more depressing effect. He remains for a greater length of time under its influence, and when he recovers from it labors under greater prostration; the shock is more profound, and prolonged nausea and vomiting may follow. He loses self-control, fears that he cannot recover, and, becoming absorbed in these thoughts with such intensity, in his already weakened nervous and physical condition, his mind gives way. From my researches, I learn that it is very rare for the patient to recover from the effects of the anesthetic with this mental disorder established, or evident to the observer; but it may come on suddenly or gradually within twenty-four, thirty-six, or forty-eight hours; or several days or weeks may elapse before its complete development. It is not always after a grave operation that these sequences occur. I have seen a violent outbreak in a patient from whom a small fatty tumor was removed. This patient, however, had had a previous attack of insanity.

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[1] Read before the Southern Surgical and Gynecological Association at Nashville, Tenn., November 10, 1896.

There may be disease of some of the other organs, or their functions may be interfered with. The inebriate, and persons long addicted to the drug-habit, do not bear operations well, as a rule, and these conditions may be put down as predisposing causes of mental alienation after shock from surgical operation.

Savage of London read a paper before the British Medical Association, at its fifty-fifth annual meeting, in which he states that "in persons who are predisposed to insanity, intoxication with mineral, vegetable, or organic poisons, and the use of alcoholic or anesthetic inhalations, may be followed by acute delirious mania, from which the patient may recover or may lapse into dementia, or even to the progressive paralysis of the insane." Dent attempts to show that mental impressions may be produced in three ways: "by anticipation, by actual operation, and by after-effects." Mairet thinks, "first, that it is in those individuals who are predisposed by heredity or other grave causes—alcoholism, infectious diseases, etc.—that surgical operations give rise to insanity; second, in the constituent elements of an operation that might act on the brain were two most important factors, namely, the anesthetic, and the degree of surgical traumatism, with its after-effects, of which disturbed nutrition plays a very important part; and third, when predisposition also is considerable, the anesthetic alone may produce insanity, or it may result even after minor operations. It is, of course, necessary to take into consideration the mental state of the patient prior to the operation, especially in those graver ones where questions of life or death are frequently involved."

All diseases that have a tendency to exhaust or impair the nutrition of the nerve-centers weaken the mind and render it less able to withstand the great strain it may be called upon to sustain. Poorly fed, badly nourished subjects come under this head.

The antiseptic drugs used for dressing wounds have been accused of causing mental disturbance, but I have never seen a well-authenticated case from this cause. Septic absorption is sometimes an accompaniment, if not a cause. The mental derangement from septicemia, pure and simple, can, however, usually be differentiated from others.

The manifestations of mental disorders following surgical operations are not different from the same disorders produced by other causes. They usually occur in the form of confusional insanity, mania, and melancholia, while very rarely we may have paranoia and dementia. We can only classify the different manifestations of insanity by their symptoms.

The mind has a powerful influence over the functions of the organs of the body, which, in turn, when interfered with, will react upon the brain and nervous centers. The outbreak may be sudden, and may begin with wild delirium; more frequently it comes on gradually, showing itself as a delusion that cannot be dissipated, and this is followed by incoherent conversation. The patient becomes restless, and is troubled with insomnia. Impatience is succeeded perhaps by violent excitement, which passes beyond control except by the employment of absolute force; or there may be only fixed delusions and insomnia, which occur in many cases, and are often the first symptoms to attract attention to an abnormal condition of mind. On the other hand, the patient may become quiet, or morose, and refuse to speak, or to notice his surroundings. There may be a moderate rise in temperature, or it may be subnormal. In the violent form, there may be a higher temperature, increased pulse-rate, dry, coated tongue, loss of appetite, and impaired digestion and constipation, with more or less loss of physical power. Acute mania is generally accompanied in the beginning by febrile excitement. If the patient is violent and restless, and laboring under great nervous tension, the functions being all interfered with, the temperature is liable to rise with the excitement and fall with its subsidence.

In septic poisoning, and in the toxemias, we always have a greater or less degree of febrile movement. Sometimes after a violent outbreak, with continued excitement for several days, signs of exhaustion appear, and stupidity and coma gradually come on.

There can be no difficulty about the diagnosis of mental disturbance, or an attack of genuine insanity, after surgical operations; the manifestations are plain enough, but we cannot always be so positive about the classification of the trouble. It is not difficult either, as a general thing, to distinguish insanity from the delirium of septicemia, for while there are cases of insanity that are probably the result of septic poison, as has already been stated, they can generally be discriminated. The antecedent history is of value in these cases. If there be no hereditary history of insanity, nor a history of a previous attack, there being no organic disease present, and the subject being robust and of good constitution, the prospect for recovery of both mental and physical health is fair. If, however, there is an hereditary, or strongly neurotic tendency, and the patient is in feeble health, the danger is great. Digestive disturbances, feeble pulse, and a tendency to stupidity and coma are always very grave symptoms. The cases of so-called confusional insanity of some modern writers, when there is no organic disease, or septic complications, usually recover after certain lapse of time. Under these conditions the affection is entirely functional, and is not generally dangerous to life. Acute mania, if it does not exhaust the patient, is less unfavorable than melancholia; the former is rather more dangerous to life, while the latter tends to a permanent impairment of the mind. The percentage of recoveries from dementia is small.

The danger to life from insanity, after surgical operations, is probably greater than from any other cause, except malignant disease. My own experience, both from observation and study of a comparatively limited number of cases, has taught me that the prognosis is not very favorable, as a majority of the cases terminate in death, or permanent mental alienation. Any mental disturbance, coming on after a surgical operation, in a patient who had not suffered from a previous attack, I should look upon with apprehension. Those systems which are poisoned by chronic alcoholism, or by the use of drugs, do not seem to have the power of resistance that persons do who are free from the effects of these depressing influences. In view of the light we now have upon this subject, the knowledge gained from personal experience, and from the literature bearing upon it, it is the duty of the surgeon to have this unfortunate complication in mind whenever he decides to perform a surgical operation, whether it be a minor or major one. Cases of sufficient number are in evidence to prove the danger from even the most trivial operation, and he should always be on his guard. In obtaining the histories of our surgical cases, the antecedent mental and nervous peculiarities should be taken into account. We should be extremely careful and watchful of those patients upon whom we operate who have an hereditary tendency to insanity, and of those who are unusually nervous, and who submit to an operation with great dread and even protest. Careful preparation should be given them in the way of cheerful surroundings, reassuring conversation, nerve sedation, and plenty of sleep, before the operation. Urgent operations cannot be delayed, but the patient can be placed in the best possible physical and mental condition in the short time given for preparation. There are some operative cases in which every moment's delay is a menace to life, and the very best must be made of the surroundings. We should do what we can to fortify the patient with hope, and should calm his fears; should avoid making a great display of instruments in his presence, and avoid having too many in attendance. The anesthetic should be administered in a separate room from that in which the operation is to be performed, when this is practicable. When there is no special hurry much can be accomplished by gaining the confidence of the patient; make him even *anxious* for the operation. Prepare his system, and his mind, and relieve him of the great dread of the anesthetic. Impress those with whom he is in constant contact with the importance of cheerfulness in his presence, and with the necessity of keeping his mind from dwelling upon the ordeal through which he must pass. Encourage him to look forward to it as the only probable means of deliverance from his malady. Much can be done in this way to increase the powers of resistance to any complication that might arise. I believe that by such careful preparation we will be able in many cases to ward off this most unfortunate sequel.

CLINICAL MEMORANDUM.

A CASE OF DIPHTHERIA TREATED WITH ANTITOXIN; SUBSEQUENT DEATH FROM ACUTE ASCENDING PARALYSIS.

By G. M. WELLS, M.D., U.S.A.,
FORT MASON, CALIFORNIA.

On May 8, 1896, I was called to see a male child, eighteen months of age, suffering from diphtheria. He was a little below the average size, but had previously been healthy. At that time the temperature was 98° F.; pulse a little above 100, but quick and weak; respiration accelerated and shallow; appetite poor; bowels constipated; profuse acrid discharge from nose; faint, sweet odor from breath; glands about lower jaw enlarged, hard, and tender; both tonsils enlarged, with a dirty, grayish-white membrane covering them and the pillars of the fauces, a part of the soft palate, and the lower part of the uvula, and that part of the throat not covered with membrane was excessively red. During the next three days the case pursued a regular course, gradually growing worse, but the child continued to take a fair amount of nourishment. On the afternoon of the 11th the temperature was 101° F. and the pulse 160, weak, irregular, and thready. There was great exhaustion, and the color was bad. The bowels and bladder had been evacuated regularly and without difficulty. There was some difficulty in swallowing. The throat was very sensitive, and bled on the slightest touch. The tonsils were greatly enlarged, and there was great swelling and tenderness of the glands about the jaw and neck. The membrane had extended into the posterior nares, had covered almost all of the soft palate, and all of the throat as low as could be seen.

The discharge from the nose was profuse, thick, and tenacious, the odor exceedingly offensive, and caused extensive excoriation of the skin. At eight o'clock in the evening, just three days after I first saw the case, I injected between the scapulæ about 10 cubic centimeters of diphtheria-antitoxin containing 600 antitoxin immunizing units. No immediate effect followed the administration of the antitoxin, but on the 12th the child was much worse. The temperature remained about the same, and the heart-beats fell about twenty to the minute, but were so weak that the pulse could only be counted with the greatest difficulty. The condition of the throat and the glands around it remained about the same. At the point of inoculation there was a red spot three inches in diameter, slightly raised and indurated, but not tender nor painful. The color of the child was pale and ashen, and there were a marked stupor and inclination to sleep. On the 13th there was slight general improvement, and on the 16th the child was considered convalescent. Its temperature was normal; pulse was 135 to 140, but strong and full; throat was free from membrane; glands had softened, and were less tender; the color had changed; general appearance of the child was good.

The difficulty in swallowing passed away in a day or two, after which the child appeared to be well, except that it was thin, anemic, and a little weak. No examination of the urine was made, owing to the fact that a specimen could not be obtained. The local and antiseptic treatment of the case were far from satisfactory, owing to the age and irritability of the child.

There was no relapse, nor return of membrane. The child ate well, slept well, ran and played around the house, was bright and cheerful, and seemed to have made a full and complete recovery, and was so reported on the 25th of the month.

About the 1st of June it was noticed that there was some difficulty in walking, and that the child would fall down without any apparent reason. On the 3d it was brought to me, and a careful examination showed paresis of the left lower extremity. This was most marked in the flexor muscles of the thigh, and extensor muscles of the leg. The entire limb was dragged after its fellow, and the toes hung downward. The step with this leg was always shorter than with the other, and it showed signs of weakness each time the weight of the body was thrown upon it. It was further noticed that the child was more liable to fall down when the weight of the body rested on this leg. The child suffered no pain, and was gaining in weight. Actual paralysis took the place of paresis, and gradually extended upward. The trouble soon manifested itself on the right side, and the paralysis was as complete there as on the opposite side. After a day or two the child would not make any attempt to walk or stand alone, and later the limbs hung perfectly limp, and could not be moved at all by the child.

The muscles of the back became involved, and then those of the neck. At first there was difficulty in sitting alone, and the child wanted to be supported in its mother's arms; while later it had to lie down all the time, could not turn over, nor raise its head.

Several days after the paralysis was noticed in the lower extremities, the soft palate became involved again; slightly at first, but later with sufficient severity to cause some regurgitation of liquids, and difficulty in swallowing. There was the nasal twang common to such cases, and some hoarseness as well.

The upper extremities did not become weak until very late in the course of the disease, and it was believed at the time that they were not involved in the paralytic process, and I have had no reason to change my opinion since. The child gradually grew worse until the afternoon of June 13th, when it died without a struggle of any kind. It had a good appetite during its last illness, and took a fair amount of food up to the day of its death. Its digestion was good, it did not lose in weight, and its bowels moved naturally and regularly each day. Although it experienced considerable difficulty in swallowing, it took plenty of liquid in the form of milk and water, and urinated at regular intervals. There was no indication that either the rectum or bladder was affected at any time. Vision was apparently not affected, and both pupils were of the same size and responded to light. The child could talk, though with some effort, until a short time before it died, and it retained consciousness almost to the last. Respiration was natural until a day or two before death, when it became more rapid, shallow, and labored.

There were no indications of disease in either lung. The color of the skin had improved much after the first illness, and remained fairly good until the day before the child died. It then became dark and livid, and assumed a mottled appearance just before respiration stopped. The heart showed signs of weakness after the first few days, which steadily increased to the last. The pulse ran up from a little more than 100 to about 200 to the minute and became so weak that it was often impossible to count. Any movement or irritation of the child would greatly accelerate the pulse, which would become quick and intermittent, showing the irritable condition of the heart. The heart-beat was so weak that it was inaudible, and the pulse could not be counted for some time before respiration ceased, showing that death was the result of cardiac paralysis. The temperature of the child varied but little, and was not above normal at any time. Most of the time it was between 98° and 98.5° F., but one or two times it was a trifle below 98° F. There were no chills, and at no time was the surface of the body covered with perspiration. The child often looked as if it were cold, and required a large amount of clothing. The hands and feet were cold most of the time in spite of all efforts to keep them warm. There was no edema in any part of the body, and nothing to indicate that the kidneys were affected, although, as stated above, I was unable to procure a specimen of urine for examination. Although motion was paralyzed in the greater part of the body, sensation remained normal, and the sense of touch, as well as that of pain, was present up to the time of death. Unfortunately the reflexes were not tested, nor electricity applied, and as no autopsy was made the exact pathological condition was not ascertained. From the literature at my command I find that acute ascending paralysis is a comparatively rare affection, and as the present case occurred in a child which had previously been treated with antitoxin for the cure of diphtheria, a double interest attaches to it. The exact causation of the paralysis is a question that may be answered more satisfactorily after the antitoxin-treatment shall have been more extensively used and better understood. Of one thing, however, I feel sure, and that is: No beneficial effect followed the administration of the antitoxin. It might have been administered too late in the disease to give it a fair trial, or it may have been administered at a time when the child would get worse irrespective of what treatment might be used, but the fact remains that the child was much worse during the next twenty-four to thirty-six hours than it had been before, and it was not until the end of forty-eight hours that any marked improvement could be noted.

MEDICAL PROGRESS.

An Unusual Case of Lockjaw.—SACHSE reported in the *Centralbl. f. Chir.*, No. 40, 1896, an unusual case of lockjaw occurring without known cause in a male, aged twenty-four years. On waking one morning he found he could not open his mouth as far as usual. The disability increased daily, until he was unable to separate his teeth. For four years he was treated without benefit, until it was discovered that the right upper wisdom-tooth pointed directly outward, and so pressed against the internal pterygoid muscle as to prevent the jaw from opening. It was removed with difficulty. Immediately after its extraction the jaw could be partially opened, and in eight weeks function was fully restored.

Regeneration of the Axis-cylinders of Divided Peripheral Nerves.—ZIEGLER has published in the *Archiv f. klin. Chir.*, vol. li, part 4 (abstract in *Centralbl. f. Chir.*, No. 46, 1896) an account of his laborious investigations into the subject of regeneration of divided nerves in dogs, rabbits, rats, and frogs. According to most histologists and embryologists, an active growth from the divided ends of the axis-cylinder ushers in the regeneration of the cut nerve. Ziegler claims, on the contrary, that the old axis-cylinder plays merely a passive part, and that the real regeneration is a neuroplasma rich in nuclei, which sends out protoplasmic fibrillæ, which later become differentiated into axis-cylinders and the other essential components of a nerve.

After division or constriction of a nerve, degeneration takes place in its peripheral and, to a less extent, in its central end. This degeneration is really a vital act, and predisposes to the absorption of the material of the degenerated fiber; meanwhile the sheath of Schwann—the neurilemma—is stimulated to active growth, and from this springs the protoplasm rich in cells, which absorbs the degenerated fibers, and by the growth and differentiation of which the new nerve is formed. This sheath of Schwann cannot, therefore, says Ziegler, be of connective-tissue origin and nature.

The formation of new nerve-fiber takes place only in the central stump of the divided nerve, in intimate connection with the border of the degenerated area; and the union of an old fiber with a new one is accomplished by means of a nucleated drop of protoplasm, which appears in the end of the old nerve-fiber in close association with the sheath of Schwann.

The differentiation in the new protoplasmic strings appears early. First, as the finer fibers are recognizable, the axis-cylinder makes its appearance. Sometimes two or three of them appear side by side in a single fiber. Their union with the old axis-cylinders is a *secondary* process. After the axis-cylinder appears in the new protoplasm, the medullary sheath becomes differentiated about it, and the nuclei assume a more superficial position, giving the appearance of a surrounding membrane to the newly formed fiber. This grows thinner and becomes the sheath of Schwann.

Experimental Results with Antistreptococcic Serum.—PETRUSCHKY, who reports in *La Presse Medicale*, November 11, 1896, his experiments with cultures of streptococci and an antistreptococcic serum, sent to him by Marmorek, has not obtained the same promising results which that investigator reported. In the first place, he found that a dose stated by Marmorek to be absolutely fatal, killed his rabbits only exceptionally. In fact, two of his own cultures of streptococci, which he had grown for two years, proved to be more virulent, so that their actions were not checked by antistreptococcic serum, although the latter was injected within twenty-four hours of the time of infection. The author, under the circumstances, thinks he is justified in his conclusions: First, that the therapeutic action of the serum is not yet to be recommended in man; and second, that up to the present time there is no certain proof of the possibility of serum-therapy in streptococcic infection.

Chronic Obstruction Produced by a Sharp Bend in the Sigmoid Flexure.—FREY reports an unusual case of chronic intestinal obstruction in *Beit. z. klin. Chir.*, vol. xvii, p. 123. The patient, a young man of twenty, and ill-developed, suffered for eight years with oft-recurring attacks of intestinal obstruction. An attack began with pain and swelling of the abdomen, which was relieved by the passage of wind. In a few days all symptoms disappeared. There were usually alternate constipation and diarrhea. In the course of time, the enlargement of the abdomen became permanent. Besides this dilated abdomen, it was noticeable that twenty inches of a rectal tube passed easily into the bowel, which received, without disturbance, two quarts of water. Peristaltic action could be seen in a large portion of bowel lying across the upper part of the abdomen. This was undoubtedly transverse colon, and the obstruction was considered to be in the descending colon.

At laparotomy, the sigmoid was found to be greatly dilated, presenting somewhat the appearance of a stomach (the sides being reversed), and at the point corresponding to the pylorus there was a sharp bend where the sigmoid entered the rectum, so that a sort of valve was formed, which could be closed by distension of the sigmoid flexure. Four inches of bowel, including the sharp bend, were removed, and a lateral entero-anostomosis was performed. In two months the circumference at the umbilicus had decreased from 81 cm. to 65 cm., although there was no loss of weight.

Several similar cases have been reported, and also cases in which dilatation of the sigmoid flexure had caused symptoms of chronic obstruction.

Frey admits that in the present state of our knowledge a differential diagnosis between these conditions and volvulus is impossible, for the symptoms in each are merely those of temporary or incomplete obstruction. In cases of acute complete obstruction, the trouble is almost certainly due to volvulus.

The Origin of a Ganglion.—The claim which Ledderhose advanced in 1893, that ganglia are cystomata arising in para-articular tissue by gelatinous degeneration, and that large cysts are formed by the union of small ones, while not explaining all the difficulties connected with this obscure subject, nevertheless seems to stand the test of time. The latest evidence in support of this theory is brought forward by THORN in the *Archiv f. klin. Chir.*, vol. lii, p. 593. His microscopic examination of numerous specimens conforms, in general, to that of Ledderhose. He also reports an interesting case in which a small tumor, presumably a ganglion, was cut down upon. The tumor was situated upon the radial side of the back of the hand, and moved with the tendon of the extensor communis digitorum running to the index-finger. When the sheath of the tendon had been opened, it was seen that a small cyst existed in the substance of the tendon, and which, in its contents and the character of its wall, presented macroscopically the appearance of a ganglion. Microscopically, it was plainly a gelatinous degeneration of the tendon. It appeared almost certain that if left to itself this cyst would have ruptured into the tendon-sheath.

Mortality in Diphtheria of Less than One Per Cent.—NEUMAYER (*Centralbl. f. Inner. Med.*, 1896, No. 44) reports that he has treated, since 1880, 977 cases of diphtheria, with only six deaths, a mortality of 0.6 per cent. The treatment consisted in gargling, irrigating and swabbing with the following solution:

Potassium chlorate, ...	℥ ss
Lime water, ...	℥ vi
Decoction of marsh mallow, . . .	℥ xxv

For use (every hour or every two hours), a few spoonfuls are diluted with three or four times as much hot water.

By employment of this treatment, according to Neumayer, the fever falls, comfort is felt, and a striking demarcation of the diseased portions appears and the further spread of the inflammation is prevented. His theory of the treatment is that the gargle coagulates the exudates and infiltrates, thus fixing their toxins, which are oxydized and rendered harmless by the potassium chlorate.

THERAPEUTIC NOTES.

Double Pointed Tacks for Sutures.—A novel substitute for a suture in skin incisions is recommended by WACHSMANN in the *Berl. klin. Woch.*, November 9, 1896. It is neither more nor less than a double pointed tack, such as is used to nail matting to the floor. The points are made short, about one-quarter inch long, and are slightly bent toward the center so as to prevent their slipping out. It is claimed that they can be applied in about one-quarter of the time required for a suture. They are made of fine steel wire and nickel plated. They can be sterilized in any manner, and may be left in the skin ten days if necessary without setting up any irritation.

Methylene Blue for Headache.—This substance which, on account of its intense coloring properties, has not become as popular as its analgesic virtues warrant, has found in LEWY an enthusiastic advocate. In the *Berl. klin. Woch.*, November 9, 1896, he speaks of the great success he has had with it in migraine. Through its very favorable action he has been able to relieve pain which defied all treatment, and to relieve it not temporarily but permanently. In order to avoid the vesical irritation which sometimes follows if this drug is given alone, it is prescribed in powders of one or two grains, together with an equal quantity of powdered nutmeg, administered in a capsule of which three or four a day are to be taken. It is necessary to caution the patient that the urine will become a deep blue color. This occurs within thirty minutes after the capsule is swallowed, and continues for eight to ten days.

Lewy's most marked successes have been in cases of angio-spastic migraine, and in nervous and neuresthenic headaches, and the results have been such that he speaks of the action of methyl blue as a curative, and not a palliative one.

Serum Diagnostic Test in the Fetus.—APERT (*La Med. moderne*, November 11, 1896) applied to the fetus the serum test for typhoid fever in the case of a woman suffering from that disease, and who, in consequence, aborted at the third month. Sterile fluids, taken from various parts of the body of the fetus, had no effect upon growing cultures of the typhoid bacilli. On the other hand, ten drops of macerated placenta, added to ten drops of the culture, produced a characteristic balling up of the bacilli.

Tincture of Horse-chestnut for Hemorrhoids.—ARTAULT of Vevey, Switzerland, prescribes tincture of horse-chestnut, in doses of from 20 to 30 drops, twice daily, in hemorrhoids, and claims it to be a specific.

Phosphate of Soda in Exophthalmic Goiter.—TRACHEWSKI, Kocher's assistant, extols the use of phosphate of soda in the treatment of exophthalmic goiter. He prescribes it in doses of from 25 to 40 grains daily.

Collodion in Pruritus Ani.—SAMWAYS of Mentone claims great success in the treatment of pruritus ani and hemorrhoids from painting the surfaces thoroughly with collodion.

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SATURDAY, JANUARY 9, 1897.

THE PREVENTION OF TUBERCULOSIS.

IN these days, which almost merit the name of the germ age, when timid reading people would, if they could, have even the air they breathe sterilized, the article by Dr. Holt, on "Tuberculosis in Infancy and Childhood," in the MEDICAL NEWS, December 12th, comes almost like a benediction.

The knowledge of the infectious nature of tuberculosis, and its dependence upon a germ, has led caretakers of infants to sterilize almost everything that goes into a child's stomach, sometimes greatly to the detriment of the child's digestion and nutrition.

The evidence adduced seems conclusive that tubercular infection is very rarely produced by alimentary ingesta, and that many of our precautions, so far as tuberculosis is concerned, have been unnecessary, while the real problem of prevention remains unsolved.

Among 119 autopsies on tuberculous children, 66 per cent. of whom were under two years of age, Dr. Holt found that the lungs showed tubercular lesions in 99 per cent., and the bronchial glands in 96 per cent., while in only 37 per cent. were the intestines and in 4 per cent. the stomach the seat of the disease. The lesions of the alimentary tract, when extensive, were almost invariably associated with extensive pulmonary lesions, and were generally secondary to them.

The deductions from his extensive and scientific pathologic observations are, that primary tubercular infection of the alimentary tract is of extreme rarity, and that this rarity is due partly to the power of the tract to repel, pass on and expel the germs, if ingested, but more largely to the fact that the milk of tuberculous animals is seldom infected and their flesh more rarely still. This observation, if true, and there is no reason to doubt it, is of vast importance, as it removes one of the reasons which have been urged for the sterilization of milk.

While it relieves our minds on one point, it should serve to sharpen our wits to devise methods of preventing infection through the respiratory tract. As is stated, "It is by breathing an atmosphere containing tubercle bacilli that most infants get the disease," and this knowledge brings disagreeably to our consciences the fact that we have hardly made a beginning toward the prevention of tuberculosis. Optimists as we may be, hardly a glimmer of hope is afforded by any plan except a strict quarantine of the tuberculous, including a destruction by fire of all secretions or other vehicles of infection. If a poor, inoffensive leper is known to be at large the people of a whole city shudder with fright and clamor for his confinement, compared to which death would be preferable; but, toward a disease much more infectious than leprosy, and of which about 6000 people die yearly in New York City, the laity are totally indifferent, and the medical profession, as a body, still apathetic.

A persistent and diplomatic campaign of education may do something in the way of prevention, but tuberculosis is on the increase where it has always existed, and has appeared where formerly it was unknown. It has only recently transpired that regions like Colorado and Southern California, where tuberculosis was formerly unheard of, and whose climatic conditions have, in recent years, attracted hordes of tuberculous people, have become infected and now offer no immunity even to natives. This transformation, in the light of our present knowledge, is due to a contamination of that previously pure air by imported infectious material.

If whole regions can be thus infected, how much easier can public conveyances, public thoroughfares, places of entertainment and worship, workshop and salesroom, hostelry and private house, become the scene of abiding infection. Much would be accomplished if the laity could be brought to a realizing sense of the infectiousness of the sputum; but that is only the first step, and, sooner or later, it will transpire that only by a rigid quarantine can the disease be checked. By no known human means can it be stamped out.

THE ANTISEPTIC VALUE OF IODOFORM.

In spite of the published statements of such well-known surgeons and bacteriologists as Heyn, Rovsing, de Ruyter, Sänger, Neisser, Baumgarten, and König regarding the antiseptic value of iodoform—they having rejected it as possessing no germicidal properties whatever—it has continued to be used by almost every surgeon, and the clinical results obtained from its use are, on the whole, excellent. Indeed, if this were not the case the surgeon would not consent to defile himself, his clothes, his house, and his patients with it. Frequently-repeated experiments have proved beyond a doubt that germs of all sorts grow with their wonted vigor in close proximity to grains of iodoform powder, and it has even been said that they will multiply in the powder itself, though that is, of course, impossible, unless some nutrient material is combined with it. As a consequence, this discrepancy between bacteriological and clinical testimony has, up to the present time, remained one of the riddles of medicine, but it has apparently been solved by Lomry, an assistant at the Löwen University. The details of his work were recently published in the *Archiv. für klin. Chir.*, vol. liii., p. 787.

His first series of experiments with iodoform were to determine its action upon suppurating wounds. A number of dogs and rabbits were selected for the test, the flanks of each animal being shaved and disinfected, and a wound made into the muscular tissues on each side. Both wounds were then injected with staphylococci. Iodoform powder was introduced into one wound, but not into the other, and both wounds were covered with aseptic dressings. The wounds were inspected daily, and numerous microscopic and bacteriologic tests were made. In all, twelve dogs and six rabbits were experimented upon. In every case the iodoform gave to the wound to which it had been applied, a red, healthy appearance, which was lacking in the wound of the opposite side. The iodoform reduced the amount of secretion, increased the diapedesis of the white blood corpuscles, and did not diminish their vitality, as shown by their ameboid movements; it favored cicatrization, and, finally, which really includes all the foregoing, it delayed the development of the microbes. In other words, these experiments proved, as far as experiments upon animals can prove, the correctness of the clinical experience with the drug.

Lomry next repeated the laboratory tests with iodoform in the manner practised by bacteriologists—with gelatin, agar, and bouillon cultures—and found, just as others had found, that it had practically no effect in delaying the growth of microbes. But the surface of a wound does not present the same conditions as does nutrient gelatin in a test-tube; the iodoform disappears, to a certain extent, from the former, while it does not from the culture medium, so the thought was suggested that iodoform might be soluble in a wound, and hence its antiseptic action. It is insoluble in gelatin, agar, and bouillon, and in these culture media it is inert. It is, however, soluble, to a certain extent, in serum, hydrocele fluid, and the like, and the theory was entertained that if the culture medium contained a considerable proportion of serum, iodoform would restrain the development of germs in it exactly as it does in wounds. With this theory in mind, numerous experiments were carried out with serum obtained from the blood of the horse, dog, and rabbit, and with the fluid from hydroceles, blisters, pleurisy, and abscesses in man, and in every instance the result was the same, *viz.*, the cultures in the medium in which iodoform was employed grew much less rapidly than those in which there was no iodoform.

It is to be noticed, however, that this antiseptic action of iodoform is a weak one, and that in no case did it altogether prevent the development of the bacteria.

The natural course of infection in a wound may be hindered by iodoform, then, in three ways: (*a*) By limiting the development of the microbes; (*b*) by lessening their virulence; and (*c*) by neutralizing their toxins.

In another series of experiments, infected serum, with and without iodoform, was injected into rabbits. The results were analagous to those obtained in test-tubes. If a certain amount, say one-quarter of a cubic centimeter, of a given sero-bouillon culture of staphylococcus was sufficient to kill a small rabbit in sixteen hours, the same amount of culture with iodoform would prove fatal only after the lapse of twenty-four hours. Here, again, the difference was one of degree only, though by careful work it was found possible to determine the dose of culture which would kill without the admixture of iodoform, but would not kill with it.

Similar experiments made with the filtered toxins of pyogenic microbes (diphtheria and tetanus bacilli, and bacteria coli commune) gave like results, so that the iodoform may be said to have an antitoxic action, although it is by no means a complete one. The fact may be accepted, therefore, that iodoform is an antiseptic, and that it acts in the manner above suggested, although Lomry does not attempt to explain it. The so-called solution in serum, in fact, does not appear to be an ordinary solution at all. After being filtered, dried, and pulverized, and treated for a long time with ether, and then distilled, not a trace of iodoform or iodin could be detected in the distillate, although the residue gave a strong iodin reaction.

However, the first question is not, How does iodoform act?, but, Has it a real, even though weak, antiseptic action?, and this seems to have been answered beyond a doubt by this thorough series of experiments.

ECHOES AND NEWS.

An Italian Honor.—The Italian government has bestowed on Dr. Behring of Paris the honor of Grand Cordon of the Crown of Italy, in recognition of his discovery of the antidiphtheritic serum.

Sir Joseph Lister a Peer.—One of the chief interests in the New Year's honors is the peerage bestowed upon Sir Joseph Lister, who is the first medical practitioner called as such to the House of Lords.

British Medical Association Meeting at Montreal in 1897. The Montreal people have determined to build a temporary large hall on the grounds of the McGill University to supplement the other buildings upon the campus. This special building will be chiefly used as a reception room and business office, in order to avoid the overcrowding that has formerly been a drawback and source of confusion. Twelve college buildings will be thrown open to the meetings of the twelve sections.

Alumni of Mt. Sinai Hospital.—The associated alumni of Mt. Sinai Hospital, New York, have elected these officers: President, Dr. Albert H. Fridenberg; vice-president, Dr. Richard H. Cunningham: secretary, Dr. Martin W. Ware; treasurer, Dr. Edwin Sternberger.

College of Physicians and Surgeons, New York.—The *Bulletin* of Columbia University for December states that the serious illness of Professor Peabody has incapacitated him from giving his lectures in therapeutics and materia medica, though it is hoped that he will be able to resume his work early in 1897. His place has been filled by Dr. Henry A. Griffin, who graduated at the College of Physicians and Surgeons in 1889.

Death of Dr. Pancoast.—Professor William H. Pancoast, the distinguished physician and surgeon, died at his home in Philadelphia, January 4, 1897, aged sixty-four years. He was the son of the famous surgeon, Joseph Pancoast, and was born in Philadelphia on the 16th of October, 1835. He was graduated in the Jefferson Medical College in 1856, and afterwards studied for three years in London, Paris, and Vienna. On his return to this country, he established himself in practice in Philadelphia, and soon acquired a high reputation as a bold, rapid, and skilful operative surgeon, who was seldom mistaken in his diagnosis and was always conservative in his treatment. He served as a surgeon in the army during the Civil War. In 1874, he was elected to succeed his father as professor in the Jefferson Medical College. He became professor of the Philadelphia Medico-Chirurgical College in 1886.

The Trained Nurses of America Organize.—Under the name of the "Trained Nurses United Aid Society of America" the most extensive association of nurses yet organized in this country has been recently incorporated. The movement, as enlarged, is in the interest of no less than 6000 trained nurses now finding employment in this country. The object of the society is the relief of members whose professional activity is suspended on account of illness or accident, and in case of death the payment of a funeral benefit. Such advantages also are proposed as homes of rest, loans of money in case of temporary distress, a sickness fund, endowed beds, and pensions.

The Fly as a Carrier of Bacilli.—Hoffman has demonstrated the presence of the tubercle bacillus in the bodies of flies taken in a room occupied by a consumptive. The droppings of the flies were full of bacilli, which were shown by experiment to be fully virulent. Coppen-Jones has proved by means of chromogenic bacteria that infection can be, and actually is carried, not only in the bodies of flies, but also by their feet. In one experiment cultures of the bacilli prodigiosus were mixed with tuberculous sputum. Flies which had been in contact with this mixture were permitted to walk across the surface of sterilized potatoes. In forty-eight hours numerous colonies of the bacillus prodigiosus were visible.

Prizes for Advances in Science.—A fund estimated to be nearly $10,000,000 has been devoted to the cause of science by the will of the late Alfred Nobel, the Swedish engineer and chemist, of Stockholm. The proceeds of this handsome sum will be divided equally into five prizes, to be awarded annually. Three of the prizes will be for the greatest discovery in physics, the greatest discovery in chemistry, and the greatest discovery in physiology or medicine. The fourth prize will be for the most notable literary contribution on physiology or medicine, and the fifth for the greatest achievement for the promotion of peace. The competition for these prizes will be open to the world.

Russian Expenditures for Hygienic Purposes.—The Russian government has just published some figures which give an idea of the considerable sums that Russia consecrates to hygiene and medicine. These figures bear upon thirty-four governments of European Russia where the system of the *Zemstros* prevails. The *Zemstros* are the local committees of government analagous to the French municipal or general councils. These committees have in their jurisdictions free medical assistance in hygienic affairs. In 1895 the expenses depending on these two objects came to the sum of eighteen million roubles, about fifty millions of francs, whereas the total expenditure was sixty-six millions of roubles, or about 175 millions of of francs. Medical and hygienic assistance have thus absorbed about a third of the sum spent.

Dr. Theodore G. Wormley Dead.—Dr. Theodore G. Wormley, the distinguished chemist and toxicologist, and professor of these branches in the medical department of the University of Pennsylvania, died on the 3d inst. of stomach trouble, after an illness of several months. He was born in Wormleysburg, Pa., on April 1, 1826, educated at Dickinson College, and in 1849 was graduated in medicine from the Philadelphia Medical College. In 1852 he was called to the chair of chemistry and natural sciences at Capitol University, Columbus, Ohio, which he held until 1865, and was also professor of chemistry and toxicology in Sterling Medical College from 1854 to 1877. In 1877 he was called to the chair of chemistry and toxicology in the medical department of the University of Pennsylvania, which he has since held.

The Pennsylvania State Board of Medical Examiners.—The rapidly increasing standard required by this board is an encouraging indication of progress toward the general elevation of scientific medicine in America. Nearly thirty-eight per cent. of the applicants were rejected by the board at its December meeting, while the percentage of failures in July last was only fifteen. Bacteriology is said to have been the subject upon which many showed an insufficient knowledge. The scope of each examination is intentionally broadened, and a more varied, as well as a more precise acquaintance with all departments relating to practical medicine, will be exacted at each succeeding session of examiners. While sympathy might be felt for those who fail, congratulation for the worthy should be extended by all who have the glory and honor of the profession at heart.

Yersin's Anti-plague Serum.—Dr. Monod, a prominent health official at Paris, has communicated the following in the Académie de Médicine: The French consul at Haïphong writes that M. Chausse treated by injection two students who had been stricken by the bubonic plague, and cured them both. Dr. Yersin, during ten days at Amoy,, obtained twenty cures of bubonic plague out of twenty-two cases treated by means of subcutaneous injections of serum from the Pasteur Institution. The efficacy of the Yersin serum as a cure for bubonic plague may now be regarded as a scientifically demonstrated fact. It follows that by organizing a sufficient supply of serum it ought to be possible, provided the Chinese government takes the necessary steps, to cause the disappearance of the bubonic plague from the regions in China where the horrible malady is endemic.

Fees of Austrian Professors.—Everyone knows that in the German universities the professor is paid by his students, and that his fees represent the greatest part of his benefits. The Austrian government, notwithstanding the resistance of the majority of doctors, has just decided to modify this state of things by presenting a bill which regulates the salary of the professors of a university. This bill suppresses the fees of students to professors and allots the payment of professors directly to the government. Students will not pay less but they will pay to the government and not the professors. This is the French system. The professors who teach abstract matters (*théoriques*) and who have small audiences will profit by this change, but others, and particularly professors of clinics, who have from three to four hundred students, will see their revenues considerably diminished. It is to be feared that these professors will no longer hesitate to respond to calls from German universities, and on the other hand that German professors will refuse henceforth to accept a chair in an Austrian university. The new law would be fatal to the old fame of the medical school of Vienna.—*Méd. Moderne.*

Surgery and Vivisection.—A curious instance of the direct application of vivisection to practical surgery was related to the Linnean Society, by Mr. J. D. Middleton. It is the custom in Smyrna to heal wounds by the help of ants. A friend of Mr. Middleton received a severe but clean cut on the forehead. He went to a Greek barber to have the wound dressed, and the barber employed at least ten living ants to bite the two sides together. Pressing the margins of the cut with the fingers of the left hand, he applied the insect by means of a pair of forceps held in the right hand. The mandibles of the ant were widely open for self-defence, and as the insect was carefully brought near the wound, it seized upon the raised surface, penetrated the skin on both sides, and remained tenaciously fixed while the operator severed the head from the thorax, so leaving the mandibles grasping the wound. The same operation was repeated until about ten ants' heads were fixed on the wound, and left in position for three days, or thereabouts, when the cut was healed and the heads removed. Sir John Lubbock, in his work on "Ants, Bees, and Wasps," quotes from M. Mocquerys a passage which relates that the Indians of Brazil made use of this procedure in the case of wounds. He had often seen natives with wounds in course of healing with the assistance of seven or eight ants' heads. This surgical ant is the *Atta cephalotes* (Linn).—*The Scalpel*, December.

The Commissioners of Charities and the Hospital Question. At the last meeting of the Medical Society of the County of New York the following preamble and resolutions were proposed and adopted:

WHEREAS, During the year 1895 the previous Board of Commissioners of Charities dismissed the members of the medical staffs of the City, Fordham, Gouverneur, Randall's Island, Workhouse, Almshouse, Maternity, and Nervous Diseases Hospitals, replacing them by nominees of the three medical schools of this city, to wit: the College of Physicians and Surgeons, the University Medical College, and the Bellevue Hospital Medical College; and

WHEREAS, The Commissioners of Charities have not rectified the injustice done by their predecessors during the past year, notwithstanding that frequent and repeated petitions have been made to them so to do; and

WHEREAS, The medical profession is satisfied that no permanent or equitable arrangement can be arrived at under the present condition of affairs, and that, if matters are left in their present condition, these positions will be a continued source of ill-feeling in the profession and of annoyance to the commissioners; therefore, be it

Resolved, That it is the opinion of the Medical Society of the County of New York, as the legal representative of the medical profession of this county, that all medical positions, salaried as well as unsalaried, which are within the present gift of the Commissioners of Charities, be taken away from said Commissioners and from the medical colleges and be placed under the control of the municipal civil service of the City and County of New York, to the end that fitness and merit, and not political nor collegiate favoritism, shall be the tests for appointment in the medical positions of the municipal service; and be it further

Resolved, That this resolution be referred to the Comitia Minora of the Medical Society of the County of New York, with instructions to draft a bill for presentation to the Legislature at an early moment, and to consult or coöperate with any body or bodies that it may think proper to secure the objects proposed by this resolution.

Obituary.—Dr. Jacob T. Field, of Bayonne, N. J., died November 24th. He was born at North Branch, Somerset County, N. J., in 1839, and was a graduate of Rutgers College and the College of Physicians and Surgeons of New York, class of 1863. He served in the United States navy with distinction during the war, and was honorably discharged from the service. With the late Dr. Frederick G. Payne, he founded the Bayonne City Hospital. He was a skilful surgeon with a large practice, and had practised his profession in Bayonne for more than thirty years. His wife and one son, Dr. Frank L. Field, survive him. —Dr. William Wallace, who died in Brooklyn on the 22d ult., was a man of special prominence in charitable and educational work, as well as having an extensive practice. Among the institutions with which he was associated were the Long Island College Hospital and Dispensary, St. John's and St. Mary's Hospitals, and the Home for Consumptives, the Church Charity Foundation, and the Vestry of St. Ann's-on-the-Heights. He was ex-president of the Pathological Society. He was a native of Cork, Ireland, having been born there sixty-one years ago. He held a double qualification from the Royal Colleges of Scotland in 1855 and 1860. He was an assistant surgeon in the naval service during the Crimean war. He settled in Brooklyn in 1864, and straightway became enlisted in all the honorable departments of work that signalize our profession. His final illness was locomotor ataxia, from which he suffered for about six months. His wife and two sons, one of the latter a graduate in medicine, survive him.

CORRESPONDENCE.

GUAIACOL IN RHUS-POISONING.

To the Editor of the MEDICAL NEWS:

DEAR SIR: August 16th last I was called to see a patient, male, aged forty-five years, suffering from an aggravated form of rhus-poisoning, the face being swollen to such an extent as to wholly obliterate the features, and the eyes being entirely closed. I made an application of zinc-oxid ointment, and ordered applications of carbonate of sodium ʒ ii in aqua ℥ iii on absorbent cotton. Result negative. Third day after onset I made an application of pure guaiacol, freely painting it over the inflamed area with a camel's-hair brush, and then covering the parts.

Next day there was marked amelioration of the trouble, and on the fourth day after inaugurating the guaiacol treatment, the poisoning and its resulting inflammation had entirely disappeared.

Again, on October 7th, I was called to treat a boy of eleven years with the same trouble, one side of the face and neck being affected to about the same extent as the previous case. I used the same treatment as before, *viz.*, guaiacol, and on the second day thereafter he was out and at school, the trouble having entirely abated.

Some two years ago I was led to try this drug in the treatment of erysipelas, having received a monograph on the subject from Dr. C. J. Whalen of Chicago, and with good results, which was my reason for experimenting with it in the above two cases of rhus-poisoning.

Of course, these being the only cases in which I have had an opportunity of using this treatment, it would be premature to claim the guaiacol a specific; yet it certainly seems to have been of good service.

E. K. MORRIS, M.D.

STURGEON BAY, WIS.,
December 26, 1896.

The Paris Night Medical Service.—According to *Médecine Moderne*, the public night medical service of Paris is maintained at a cost to the city annually of 145.000 francs, or about $29,000. In return for this service the patients paid the city but 3217 francs. One hundred and thirty-five doctors are employed, the yearly salary of each being 600 francs, or $120.

OUR PARIS LETTER.

[From our Special Correspondent.]

PROFESSOR ROUX TALKS ON DIPHTHERIA—PET ANIMALS AS DISSEMINATORS OF DISEASE—TWELVE FATAL CASES OF "PSITTACOSIS"—TUBERCULOSIS IN DOGS—"WOMEN AND THE CRUSADE AGAINST PROSTITUTION, VIVISECTION, ALCOHOLISM, AND WAR."

Paris, December 14, 1896.

On December 11th and 12th Professor Roux talked before his special students at the Pasteur Institute on diphtheria. Needless to say the lectures were extremely interesting and complete. The review of the recent work on diphtheria the world over was made a special feature. Though the talks lasted over four hours altogether, not once did the speaker mention the Pasteur Institute or his own work. Behring's investigations were given a large place. The recent work of Brieger and Boes was fully recalled, and Ehrlich, Sydney Martin, and our own Park, Williams, and Talbot Smith, received mention. Only that certain important lacunæ in our knowledge of diphtheria were filled up, without the mention of any names, one would not know how much Yersin and Roux had done on that subject. Metschnikow, in treating of cholera, had displayed the same modesty. There was a casual mention of a personal experiment in swallowing a certain amount of a living culture, and that was all there was to show that he had ever done any special work in the study of the disease. Thus, it would seem, the traditions of the Pasteur Institute are being lived up to, and the modest spirit of the great master is perpetuating itself in his pupils, and in the atmosphere of the Institute where rest his remains. Such self-abnegation is delightfully refreshing in these days of savants who are usually thoroughly immune to the microbe of excessive modesty.

Roux finds so far that none of the objections urged against the serum is well founded. The serum does not sensibly affect the normal individual even when injected in considerable quantities: it does not produce nephritis; it gives rise to no rashes other than those which any serum may occasion, and it has now been used in too many thousand cases to leave at all uncertain its absolute innocuousness, even though its administration is sometimes accompanied by various pathologic phenomena, of which, however, it is not the cause. The doubting Thomases in serumtherapy would find serious matter for thought in his enthusiastic hopefulness. He urges the early use of the serum, as soon as the slightest patch of membrane is visible, and without waiting for the result of cultures, and insists on its liberal injection. Not 5 or 10 units, but hundreds, even thousands, may be used in serious cases without the slightest fear.

At the hands of a number of French scientists, lately, pet animals have been coming in for their share of blame in the conveyance of infectious diseases. Two very striking reports have been made to the Academy of Medicine within a month. Gilbert and Fournier reported a series of some fourteen cases of a peculiar contagious disease which was almost always fatal (only two patients survived), which they traced to parrots. The specific cause of the disease is a bacillus that was described by Nacard in 1893 as having been found in the bone-marrow of certain parrots dead from the disease. The bacillus was found in the lungs of patients after death, and was rapidly fatal to guinea-pigs and rabbits, producing characteristic lesions. The microbe resembles very closely the bacillus of typhoid fever, and was at first supposed to be identical with it. It gives even the agglutinative reaction with typhoid serum, that has been considered so characteristic of Eberth's bacillus. Widal has pointed out within the past week, however, that there are certain distinguishing characteristics in the quality of its agglutinative action. The symptoms of the disease are those of a fulminant type of broncho-pneumonia, with intense depression, and Gilbert and Fournier are of the opinion that some of the reported family epidemics of pneumonia have been really due to this disease, for which they suggest the name, Psittacosis (πσιτταϰος, a parrot).

The dog has usually been considered very immune, or at least resistent, to tuberculosis. At one time injections of canine serum were suggested, I believe even employed, as a therapeutic measure in this disease. Dr. Cadiot now reports to the Academy of Medicine that in 205 autopsies on dogs, he found tubercular lesions 105 times. Only about half of the lesions were localized in the lungs. The dog is especially liable to mucous and cutaneous tubercular lesions. The nasal secretion often contains the bacilli, and the animals are peculiarly prone to have small and not easily noticeable but persistently discharging tuberculous fistulæ in the cervical region. The danger of infection, especially of children, is easily understood in such a case, and some of the cases of tubercular meningitis, where the family history and the personal environment give no trace of the mode of injection, may have had such an origin as this. The cat is reported by the same observer to have a series of mucous and cutaneous lesions very like those observed in the dog. The striking picture of the English observer in Iceland describing the children as "exchanging caresses and echinacocci" with dogs, is vividly recalled by the possibilities suggested by these observations.

Speaking of animals, one has been inclined to think that it is only in America that physiologic and bacteriologic work is hindered by the antivivisectionists, but, alas! it is now commencing in France, also. One of the recent numbers of Larousse's *Encyclopedic Journal* was devoted entirely to women and women's work, "*Les femmes et les feministes,*" and a leading paper bore the title: "Women and the Crusade Against Prostitution, Vivisection, Alcoholism, and War." Verily, the experimenters have gotten into unsavory company. The wonderful results achieved during the last ten years by experimentation on animals does not hinder the propagation even here of rabid fanatical ideas of ultra-carefulness of animal feelings. Even Magnan's now classical description of the antivivisectionists as a special class of degenerates coming under the same general head as a number of other monomaniacs—people who have a little too much of one quality to be perfectly sane—does not seem to have stopped the propagandism very much. Meantime, the medical profession in general, as with us in America, looks idly on. One would not think their interests were at all involved in the question.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

PHILADELPHIA HOSPITAL TRAINING SCHOOL FOR NURSES—COURTESY EXTENDED BY THE PHILADELPHIA POLYCLINIC—UNSANITARY CONDITION OF BAKESHOPS—BEER BOTTLES AS RECEPTACLES FOR SPECIMENS OF URINE.

PHILADELPHIA, January 2, 1897.

At the graduating exercises of the Philadelphia Hospital Training School for Nurses, held in the amphitheater of the hospital on the 29th of December, twenty-one nurses were awarded diplomas. Addresses were made by Dr. John H. Musser of Philadelphia, and Dr. William Osler of Baltimore.

No better illustration of the good feeling which exists between the medical profession of New York and Philadelphia, and especially between the teaching faculties of the two cities, could be had than the fact that upon the receipt of the news of the damage by fire on Christmas morning to the New York Polyclinic building, the Faculty of the Philadelphia Polyclinic promptly extended its sympathy and the courtesy of recognizing, without charge, the tickets held by the students for their unexpired term. This was gratefully appreciated by the Faculty of the former institution, but their prompt and vigorous action in providing facilities for continuing their work rendered acceptance of the courtesy unnecessary.

At the meeting of the Woman's Health Protective Association, held at Association Hall on December 29th, Dr. Benjamin Lee, Secretary of the State Board of Health, addressed the members on the subject of the unsanitary condition of the bakeshops of the city. He was present at the meeting in response to a request that he give his opinion on this subject. In the course of his remarks he said: The importance of removing the evils attendant upon the present filthy condition of the bakeshops is as great, or greater, than the importance of providing pure and wholesome milk. It is a matter of notoriety that in the outbreaks of cholera in Europe the workers in the bakeshops have been the first to be attacked by the disease, and it is also known that the mortality of bakers is greater than that of the average of artisans. These unfortunate results are due to the vitiated atmosphere of the cellars where baking is usually carried on. If the agitation for an improvement of the sanitary conditions were conducted solely for the welfare of the workmen in these shops it would be worthy of encouragement, but the need for it is very much greater in consequence of the spread of disease that must accompany the preparation of bread in such places. It has been suggested that a bill be introduced into the Legislature providing that the factory inspectors be instructed to inspect the bakeshops and enforce regulations as to their condition, but it would be more appropriate that the matter be under the care of the Board of Health.

A typewritten letter from the Pennsylvania Bottlers' Protective Association has been received by the physicians of this city, calling attention to an enclosed letter from a physician, deprecating the use of beer or other bottles originally intended for beverages, as receptacles for specimens of urine, and requests the absolute refusal of specimens brought in such bottles. The practice, though strenuously to be condemned, is unfortunately only too common in certain portions of the city, and especially in dispensary practice.

TRANSACTIONS OF FOREIGN SOCIETIES.

London.

SPONTANEOUS DISAPPEARANCE OF SECONDARY CANCER.—ARSENIC CAUSES DISAPPEARANCE OF SARCOMA OF THE TESTICLE.—THE CAUSE OF PAIN IN MOVABLE KIDNEY.—SUCCESSFUL REMOVAL OF A GLIOMA OF THE CEREBELLUM.—TREATMENT OF PERITONITIS DUE TO PERFORATIVE APPENDICITIS.

AT a meeting of the Clinical Society of London, November 27th, PEARCE GOULD showed a case of *spontaneous disappearance of a secondary cancerous growth* in a woman aged forty-four years. Ten years previously she had received a blow on the left breast. Five years after this the breast was removed for scirrhous carcinoma. Recurrence of the growth was twice operated upon. The tumor again recurred, with difficulty in breathing, and it was considered inadvisable to perform any further operation, as the growth had probably become disseminated. There were numerous hard nodules around the scar, and considerable enlargement of the glands in the axilla and above the clavicle. She also had pain in the left thigh and one inch of shortening, and below the trochanter there was a large, bony growth. Nodules also appeared in the right axilla and above the right clavicle, and the right chest was dull below the spine of the scapula. This was the condition in March, 1896, when she was thought to be in the last stage of malignant disease, and her death was daily expected. Three months later she was much better. The enlargement of the axillary and clavicular glands had disappeared, dyspnea had ceased, and there was no dulness on percussion except at the base of the right chest. The nodules in the chest-wall had also disappeared, and the swelling of the leg had markedly diminished. There had been no treatment which might influence the progress of the disease. Microscopic examinations of the growths made by two competent observers revealed typical scirrhous cancer.

GOLDING-BIRD mentioned the case of a man, aged sixty, whose right testicle had been removed for sarcoma, of which he had microscopic sections. Three weeks later the stump fungated, and a large mass was removed, with as much of the cord as possible. In another three weeks there was an infiltration in all the surrounding skin. Morris saw this case, and unhesitatingly pronounced it malignant, but suggested arsenic in rapidly increasing doses. In ten days, when the poisonous dose had been reached, the growth had entirely disappeared. That was three years ago, and there has not been any recurrence.

At the meeting held December 11th, DAVID NEWMAN read a paper on *increased vascular tension in the kidney as a cause of renal pain, hematuria, and albuminuria,* in which he pointed out that the causes of increased vascular tension were (1) mechanical and (2) some morbid process. Thus a movable and large kidney in one of his patients caused severe paroxysms of pain, hematuria, etc., the symptoms resembling those of renal colic. There was no albuminuria, independent of the presence of blood. Suture of the kidney to the parieties relieved these symptoms. In another case of floating kidney, it was found that the rotation of the organ had coiled the ureter and blood-vessels around one another.

Another case was cited to prove that inflammatory hyperemia causing pain and albuminuria may be relieved by incision. This patient gave a history of lumbar pain, with small oxalate calculi, and occasional hematuria. The urine contained albumin, but no casts. While under observation, he had several attacks of renal colic. The kidney was found to be much enlarged, very tense and of a dark chocolate color. No calculi were found, and the bleeding from an incision into the pelvis of the kidney was so free that the wound in the cortex had to be plugged with iodoform gauze. The patient made a good recovery, the albuminuria entirely disappeared, and his health has since been excellent. Two other cases were mentioned, in which strangulation of omentum or bowel was accompanied by renal hyperemia, with almost complete suppression of urine, which the author thought due to a reflex spasm of the renal vessels of the ureter.

BRUCE CLARKE thought that obscure symptoms of calculus were often due to movable kidney.

BARKER, referring to those cases of supposed calculus in which none was found on operation, but in which all symptoms thereupon subsided, suggested that minute disseminations of uric acid in the tubules were dislodged by manipulation. An unsuccessful exploration for calculus is often followed by large quantities of uric acid in the urine.

PARKIN had removed from a four-year-old child in June, 1894, a *gliomatous tumor of the cerebellum*. For several months there had been gradually increasing difficulty in walking and talking. The gait was ataxic, with a tendency to fall backward. The left leg was rigid, and both knee jerks were exaggerated. The temperature was subnormal, pulse irregular, but not slow. There was no occular paralysis, but intense optic neuritis with hemorrhages. The child was listless, complained of constant headache, and had three severe general convulsions. Her condition was rapidly becoming worse. A large scalp flap with the apex well down on the neck was raised upward, the bone was removed, and a flap of dura mater, with the apex upward, was turned downward. The occipital sinus was ligated. A portion of each lateral lobe, and the posterior part of the middle lobe, were of a different color from the rest of the cerebellum and were excised. In three months the child recovered the power of walking and talking, and up to the present time (2½ years) there has been no return of any of the symptoms. Examination of the tumor showed it to be a glioma.

Another interesting case of brain surgery was described by GUTHRIE at a meeting of the Royal Medical and Chirurgical Society, held December 8th. The patient, a man aged twenty-five, had suffered for twenty-two years from violent jactitations of the left arm and leg, and in a less degree of the right arm and leg. The movements were ataxic, choreaic, and clonic in character, and were increased by attempted voluntary action. There was external strabismus and proptosis of the left eyeball. The tongue deviated to the right. The symptoms seemed to indicate functional perversion of the right motor area of the cortex. On operation, this area was healthy in appearance, but electrical stimulation of the thumb centers produced fits of Jacksonian epilepsy. The thumb center with the adjoining area of the cortex, measuring about one-half inch in diameter, were excised. The result of the operation was complete paralysis of the left hand and arm, lasting about a week. During this time he had seventeen epileptic fits, at first affecting the right side only, but afterward becoming universal. After a week, voluntary actions of the left arm were recovered, but they became increasingly jerky and ataxic until, in three months, his condition was the same as when the operation was performed. It was concluded that the excision of cortical centers is only likely to arrest movements permanently when they are extremely limited in range and extent, and in such cases the operation is unnecessary. In severe cases the removal of cortical areas might possibly arrest the movements permanently, but the dangers of operation overbalance its possible advantages.

At a meeting of the Medical Society of London, held December 14th, MAYO ROBSON described six cases of general peritonitis following perforating appendicitis on which he had operated during the past year, and five of which had recovered. His treatment was very free irrigation with water or weak boracic acid solution, followed by free drainage with several large rubber tubes.

Berlin.

GASTROENTEROSTOMY FOR CARCINOMA.—ACTINOMYCOSIS OF THE JAW.—LEPROSY.—ESOPHAGOTOMY FOR THE REMOVAL OF FALSE TEETH.—THE WARM BATH AS AN AID TO ABDOMINAL PALPATION.—HEMORRHAGE FROM THE HEALTHY KIDNEY.

In the Medical Society, November 4th, ROSENHEIM presented a patient upon whom had been performed *gastroenterostomy for carcinoma* of the stomach two and a half years before. At the time of the operation the general condition of the patient was bad, and the tumor was so extensive that a radical removal was out of the question. Although the tumor had continued to grow, the general condition of the patient had improved and she was still very comfortable. In such cases this operation should be recommended, because it frees the patients from the constant, fearful pain and uncontrollable vomiting from which they suffer.

GLUCK presented a patient who had suffered from *actinomycosis of the jaw, parotid gland, and the associated soft parts*, requiring the removal of the right half of the right jaw and the parotid, and the ligature of the external carotid artery. The wound healed perfectly, but no apparatus had been successful in enabling him to chew solid food. Gluck also exhibited skiagraphs of a boy, a portion of whose jaw was removed nearly three years ago for myxofibrosarcoma. The sections of the jaw were held in position by a strip of metal screwed into the bone. The result was perfect, and the action of the lower jaw was normal. Such substitution of ivory or metal can only succeed in case of healthy ends of bone which are capable of regeneration, absolutely aseptic union, and perfect fixation. Faulty asepsis leads to suppuration, erosion of the bone, and ulceration. Imperfect fixation produces an osteitis and a gradual loosening of the ivory, bone or metal.

Havelburg discussed the subject of *leprosy*, more especially with reference to its occurrence in Brazil, where he had had large experience. As yet no attempt to cultivate the leprosy bacillus has succeeded, nor have any inoculation experiments upon animals. He believed in the contagious character of the disease, although unable to say in what way infection occurs. Apparently unfavorable hygienic conditions are required before the bacillus can obtain a foothold. At any rate, the great majority of cases occur among persons living in the most filthy condition. The period of incubation is doubtless a long one. For example, a man and a woman who had lived in good circumstances in Brazil for a long period returned to Germany, apparently in perfect health. The man, after a year and a half, and the woman, after two years, developed the disease.

Koebner asserted that there was no reason for the alarm felt by the public if a single case of leprosy was discovered in some hotel; that the disease could not be communicated by brief contact with the person affected, but that only those individuals contract leprosy who have an intimate association with lepers for months or perhaps even for years. In cases of difficult diagnosis, the method recommended by Kalindero is of service. He discovered that in the contents of a blister the bacilli appear within three or four days. The repeated examination of the blood is also essential. The history of various cases had convinced him that extraordinary and unknown circumstances were necessary to explain the contagion of leprosy.

Joseph narrated an instance in which a child of healthy parents which had a leprous wet-nurse afterward became leprous. He was of the opinion that one distinct case of this nature outweighed a great deal of negative testimony regarding the contagion of the disease. The method of contagion is truly unknown, but more examination ought to be given to the sputum, which often contains leprous bacilli in great numbers.

Franz Koch looked upon leprosy as contagious and incurable, and advocated the complete isolation of lepers.

Rosenheim exhibited, at the session of November 11th, a *patient who swallowed a plate with four false teeth*. On the following day, a sound was arrested at a distance of 24 cm. from the gums. On the next day a 12 mm. sound passed readily into the stomach. It was therefore thought that the teeth had passed out of the esophagus. They did not appear in the stools, and after four days, by means of an esophagoscope, the false teeth were plainly seen, just below the larynx. All attempts at extraction failed, and so firmly were they fixed in the esophagus that after an incision had been made it was necessary to cut the plate in pieces in order to remove it.

The wound suppurated, and on the fourth day after operation the patient completely lost his voice, on account of paralysis of both laryngeal nerves. As this symptom did not arise until four days after operation, it was attributed to an inflammation in the nerves, proceeding from the suppurative peri-esophagitis. Aside from this point, the case was interesting in showing the failure of a sound to detect the foreign body, whose presence was easily made out by the esophagoscope.

In another case—that of a girl who in sport had swallowed three 10-mark gold pieces, eight days passed before an examination was made. Here again with the esophagoscope the coins were plainly seen and were easily extracted, although 34 cm. from the teeth.

The advantage of *abdominal palpation in a warm bath* was brought forward by Lennhoff. The influence of the warm bath relaxes the skin, as well as the voluntary muscles. After a patient has been for ten or fifteen minutes in a bath as warm as can comfortably be borne, abdominal palpation can be carried out almost as perfectly as in narcosis. This method possesses also the advantage that voluntary respiratory efforts can be called upon for assistance is diagnosis. Its absolute freedom from danger is another point of superiority. Lennhoff mentioned two cases in which by this means he had been able to confirm a suspected diagnosis. In one instance he made out a carcinoma of the stomach about the size of a hazelnut. It could not be felt at all by the usual methods of examination. In another case he settled the diagnosis, which lay between a carcinoma of the stomach and an aneurism of the aorta, in favor of the former affection. Both of these diagnoses were confirmed by autopsy. For convenience in examination, the patient is suspended in the tub by straps, which can be raised or lowered at will.

At a session of the Union for Internal Medicine, held November 16, 1896, Litten presented a case of *peculiar configuration of veins of the thorax and abdomen*. There were six parallel dilated and tortuous veins extending from Poupart's ligament to the sternum and ribs. Examination of the chest showed a tumor on the right side. This proved to be an aneurism of the ascending aorta, which so compressed the right ventricle that the vena cava inferior was obstructed. Owing to the fact that this obstruction was gradual, collateral circulation through the azygos veins was established and immediate death was avoided.

At the session of November 30, 1896, Klemperer spoke of the occurrence of *hemorrhage from the healthy kidney*. This occurs in cases of vicarious menstruation. Psychical influences may also cause vaso-dilation and bleeding. Hysterical hemorrhages are to be included under nervous influences. The author had known two such cases. There are in medical literature a number of cases of bleeding from the kidney supposed to be due to a calculus. In some of these the kidney was removed, and in others merely incised. In none of them was anything found, but the operation was followed by recovery from the bleeding.

Klemperer divided the cases into: (1) acute, due to over exertion, such as mountain climbing; (2) chronic, which may be either hemophylic or angioneurotic in character. Only a single hemophylic case had been reported. The author mentioned two others. The hemorrhages occurred at irregular intervals with more or less pain. The presence of blood cylinders in the urine proved the hemorrhage to be of renal origin. Both cases recovered without operation, one of them after the use of warm baths associated with cold local douches. Two cases of renal hemorrhage of the angioneurotic type were confirmed by cystoscopic examination. Both recovered, one after the removal of the kidney, which was found to be absolutely normal. In hemophylic or neurosthenic persons, although the hemorrhages may have continued for a long time, if no organic trouble can be made out, operation is distinctly contraindicated.

Nitze spoke in favor of simple incision to expose the kidney in doubtful cases—a harmless procedure which sometimes gives most valuable information.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE—SECTION ON GENERAL MEDICINE.

Stated Meeting November 17, 1896.

Reynold W. Wilcox, M.D., in the Chair.

Andrew H. Smith, M.D., read a paper entitled

ANEMIA IN RELATION TO CARDIAC DISEASE.

He commenced by saying that when it is remembered that the three prominent characteristic signs of organic disease of the heart, namely, dyspnea, edema of the lower extremities, and the presence of a cardiac murmur, are also found in connection with and as a result of anemia, it can be readily appreciated that when both of these conditions are conjoined in the same individual a good deal of nice discrimination is required in order to assign to each factor its proper share in the causation of the phenomena met with. Unfortunately, he said, the tendency is to ignore, in a great measure, the functional disturbances, and deal only with the effects of the organic lesion or lesions present; so that proper consideration is not given to the importance of the blood changes taking place, which, unless interfered with, will eventually produce the most disastrous results. This is a grave mistake. It should always be borne in mind that in organic disease of the heart nature provides compensation by means of hypertrophy, and that the patient is in no danger from this source as long as the compensation remains adequate. Our efforts to sustain the heart directly should, therefore, be reserved until the time when this compensating power of nature begins to fail. In the meanwhile our attention should be mainly devoted to improving the condition of the blood; by which means material assistance can be rendered the patient. By eliminating the anemic element, the whole system can be invigorated and the heart thus enabled to stand much better the strain resulting from the organic trouble present.

As a matter of fact it has been found that in a large proportion of cases, anemia is present in connection with the organic disease. This is not to be wondered at when we reflect that the most prolific source of such organic trouble is rheumatism. Not only does the rheumatic disease itself impoverish the blood, but, unless special pains are taken to prevent this result, the salicylic acid and its compounds so commonly given in rheumatism have the effect of increasing this impoverishment. To a patient suffering from organic lesions of the heart, therefore, anemia is a matter of importance, and coming on or continuing when the compensation becomes defective, it is of grave import. The vigor of the constitution is seriously impaired and a vicious circle is established. Unless the progress can be arrested the course of the case will be rapidly downward.

The most obvious symptom of anemia is pallor, but in these cases this is liable to be obscured by cyanosis. Stephen Mackenzie has suggested, however, that an approximate idea of the extent of the anemia present can be obtained by an examination of the nail tips. As long as any pink hue remains here it may be inferred that the blood contains at least fifty per cent. of the normal quantity of red corpuscles. Fortunately for the matter of diagnosis, anemic murmurs are confined to the systole. A soft systolic murmur, of low pitch, heard in the pulmonary area, is that commonly met with. In the aortic area the vast preponderance of bruits are of organic origin. Hemic murmurs also occur very rarely in the mitral region. When they do occur there we do not find the displaced apex and forcible impulse met with in organic mitral disease. Leaving the cardiac region, we find anemic murmurs also in the arteries of the chest and neck. In pronounced anemia a murmur is heard with each ventricular systole. An arterial murmur might be met with where there is no bruit in the pulmonary area, and *vice versa*. A venous hum in the great veins of the neck has long been recognized as a prominent sign of anemia; but this venous hum is not entirely characteristic, since it may in some instances be heard when the individual is perfectly healthy. Still, its presence will often enable us to decide that a co-existent cardiac murmur is not of organic origin.

As to the dyspnea, there are no means at our command of distinguishing that due to anemia from that due to organic disease. Edema of the lower extremities, as had been mentioned, is common to both conditions; but if to this is added a more general puffiness over the body, it might be assumed that considerable impoverishment of the blood is present. The most conclusive evidence of the existence of anemia, however, can be obtained by the direct determination, by means of the instruments now at our disposal, of the proportion of red corpuscles and hemoglobin in the blood. Dr. Smith urged the importance of very frequent examinations of the blood, so that if it is found that one remedy is not satisfactorily combating the anemia, another may be substituted.

The treatment of the anemia met with in connection with organic cardiac disease is not essentially different from that of anemia in other conditions. The necessity for relief of the blood condition is so urgent, however, that the most prompt and efficient measures are called for. In his own experience nothing had proved so satisfactory for the purpose required as the use of enemata of defibrinated bullock's blood. Of course, this did not exclude the use, by the mouth, of such other remedies as seemed indicated. The point that he wished to emphasize was, that, not only in advanced, but in the early stages of cardiac disease, the evidences of anemia should be sought for, and he was convinced that if the importance of this was recognized, we could avert many dangers, and carry our patients along in a much more satisfactory manner than otherwise.

Dr. Beverley Robinson said that while there were many cases in which the differential diagnosis was perfectly simple, all clinicians met with some in which they had a great deal of difficulty in determining just what belonged to the one condition, and what to the other. In this class of cases he believed it was often a good thing to look up the older authorities, like Stokes, for instance, who treated such subjects a good deal more fully than more recent authors, such as Flint, Loomis, and Osler. We were not, he thought, always making progress, simply because we changed our methods. An advance, however, had certainly been made in the present plan of examination of the blood. Still, when it came to the very difficult cases, even this procedure did not clear up some of the doubtful points.

We are, therefore, brought back to the question of systolic bruit at the apex. We feel that it is not entirely due to anemia. There may be dilatation of the left ventricle, and it is important to make out what part belonged to the anemia and what to the organic cardiac disease. All that he could say was that in reasonable doubt the physician should be judicious and sensible in the course pursued. A certain amount of heart tonics, such as digitalis, strophanthus or nitroglycerin, with moderate doses of strychnin, may be called for on account of the heart's action. When this blowing murmur is present it is not the part of wisdom to give large doses of digitalis or strophanthus. The great indication, as Dr. Smith has pointed out, is to improve the condition of the blood.

When the anemic condition is present no one could doubt for a moment that it adds very greatly to the gravity of the cardiac disease. We know that it will take both time and the most judicious management to get rid of it, whether it be secondary or primary. Of the remedies recommended, iron and manganese are the ones most commonly resorted to. He did not believe it very important that we should use this preparation or that preparation. Almost every physician has come to feel special confidence in some particular form of iron, and if he gets good results from it, it is better to stick to it than to go on trying every new preparation that the druggists throw on the market. At the present time it is the fashion to maintain that the organic salts are a great deal better than the inorganic ones, but, for his part, he had not yet seen sufficient evidence to convince him of this fact. His experience had taught him, however, that there are quite a number of cases in which iron may be given indefinitely without producing any result whatever, unless at the same time oxygen is administered artificially. He believed that the oxygen has the effect of rendering the iron more assimilable, but whether this is the case or not, he knew it to be true that the two combined successfully overcome anemia in some cases where iron alone has no effect. In conclusion, Dr. Robinson spoke of the efficacy in anemia of sulphur baths, either artificial or natural. He had been at Aix-les-Bains during the past summer, and he said that while much of the benefit which invalids received there was no doubt due to the change of air and life, he was convinced that the principal good effect in anemic cases was due to the sulphur baths. He believed that the same good results could be obtained by artificial sulphur baths at home, and especially in the case of young girls with slight degrees of anemia. Care should be observed, however, that the baths were not too warm or too long.

Dr. William H. Thomson said that he felt somewhat disappointed that the reader of the paper had confined himself almost exclusively to the consideration of the hemic murmur. He thought the functional murmurs among the most important that we meet with. He had known of more than one individual to be rejected by life insurance examiners on account of a harsh, regurgitant murmur which was purely functional, and with no anemia present. There are also very strange murmurs incident to the act of respiration. These are all systolic, and certainly functional. A diastolic aortic murmur and a presystolic murmur cannot be functional. Having spoken of the murmurs heard in chlorosis, he referred to a class of functional murmurs which are met with in nervous individuals, as often in men as in women.

He related a case of this kind. A gentleman came to him trembling with excitement about his heart. He complained of pain in the precordial region, and an examination revealed the presence of a booming and buzzing murmur at the apex, which presented some of the characteristics of a mitral regurgitant bruit. The patient, having been asked to lie down, it was found that in the recumbent posture the murmur was very much diminished. When the pulse had declined from 100 to 80 it was found that the murmur had almost entirely disappeared. He was requested to take a long breath, and it was then found that it was gone altogether. It certainly would not have disappeared if it had been due to organic changes at the mitral valve. The recumbent position does not make an organic mitral murmur disappear, especially if the patient lies on the left side. The quality of the sound was also different from that heard in connection with a mitral regurgitant murmur, being, as had been said, booming and buzzing in character. Furthermore, it did not transmit to the left, and the greatest intensity was not at the apex, but in the fourth interspace, to the right of and above the apex. This kind of murmur he believed to be due to the irregular action of an excited heart, and was of muscular origin.

Another kind of functional murmur is that heard during certain acts of respiration, particularly inspiration.

One peculiarity of it is, that it is heard on both the right side and the left side, but away from the area of the heart (in the axillary region.) It is evidently produced in the lung, though he had no theory to advance as to the manner of its production. He could only say that it is to be found at a distance from the area of the heart, and that it unquestionably is a functional murmur.

Anemia, he went on to say, is in his opinion often the direct cause of cardiac disease. Throughout the animal kingdom the muscular power is proportionate to the amount of respiration. Among our women this does not seem to be the case, but the female peasants of Europe, and the women of the East, who are accustomed to work out of doors, are capable of enormous physical exertion. It is a fact that needs no demonstration, that the very first effect of anemia is to produce muscular weakness all over the body. The blood flowing from a muscle when it rested was more venous in character than the blood in the right side of the heart. Therefore, anemia always meant muscular weakness, and if it persisted it inevitably produces degeneration. There is no condition of fatty degeneration of the heart so pronounced as that met with in pernicious anemia. It is a mistaken idea to give iron simply because there is anemia. If there is any elevation of the temperature it does harm. Especially is this the case in acute articular rheumatism. So also in phthisis. In the anemia of both these affections cod-liver oil is much better than iron.

DR. FRANK W. JACKSON said that although Dr. Smith had claimed that anemic murmurs are always systolic, he thought that everyone who had had much experience in this class of cases must have found exceptions to this. Occasionally an anemic murmur might be diastolic, and various authorities had confirmed this view. He had himself, in several instances, heard a presystolic murmur in patients who were suffering from anemia and who afterward returned to health; showing the absence of organic lesions. As to dropsy of the lower extremities, Dr. Smith had maintained that it is apt to be more diffuse in anemia than in organic cardiac disease; but he did not think this distinction was of much practical service, as he was sure that everyone had met with anemic cases in which it was just as diffuse as in the latter. As to anemic murmurs being intensified by the recumbent position, he had found many cases in which the change of position produced no change whatever.

DR. H. NEWTON HEINEMAN said he thought it was about time that the profession should get rid of the idea that in any case that is at all difficult the diagnosis could be made upon a few data. Whether anemia is present or not, it is requisite that the physician should be in possession of a knowledge of the complete clinical history of the case, the exact character of the murmurs present, and the amount of arterial tension. If these and similar points were more carefully studied, there would be much less doubt in the minds of medical men than is at present the case. It is well to bear in mind also that the intensity of the murmur in any case bears no relation to the gravity of the lesion. Dr. Heineman spoke for some time in regard to the efficacy of baths. In all cases where it is possible, he thought that the patient should be sent to the location of the natural springs. While the sulphur baths of Aix-les-Bains were of great value in gout and rheumatism, he thought they were of no service in cardiac affections. The saline baths of Bad Nauheim, on the other hand, he believed were highly advantageous in diseases of the heart and circulatory system, promoting rapid tissue-metamorphosis. The chalybeate waters of Pyrmont were of special value in chlorosis. In many instances, however, artificial saline baths could be used with great advantage at home.

DR. SMITH, in closing the discussion, said that regarding the muscular murmur spoken of by Dr. Thomson, all the evidences of anemia were wanting. It was the sound, he thought, described by the late Dr. Austin Flint as intraventricular, and was a local muscular effect. As to the sound apparently referable to the respiratory act, he did not believe it was very common. He had met with it in three instances. One of them was a young girl, in whom it was sometimes present and sometimes not. It was a moderately harsh murmur, and occurred in inspiration, but not in expiration. He said he agreed with Dr. Thomson in regard to the harmfulness of iron in febrile conditions. In regard to the matter of diastolic murmurs, supposed to be of anemic origin, spoken of by Dr. Jackson, he said that this brought us back to the question of the possibility of such a thing as a presystolic murmur. Personally, he was not willing to accept its existence, and believed that the so-called presystolic murmurs were not really presystolic, but were heard just at the beginning of the systole.

H. NEWTON HEINEMAN, M. D., read a paper entitled

STENOCARDIA (ANGINA PECTORIS).

(See page 37.)

DISCUSSION.

DR. FRANK W. JACKSON said that the distinction referred to in the paper had always been somewhat a matter of wonder to him. If the pain were not very severe, the case was called one of pseudo angina; if it were severe, one of genuine angina. He thought stenocardia, also, a much better term than angina pectoris. The treatment advocated by Dr. Heineman, he went on to say, offered us new hope for our patients. He had always been afraid to tell an individual that he suffered from angina pectoris, as such a statement was commonly regarded by the public as equivalent to a death-warrant. It would be a great gain to be able to tell his patient now that he had heart-pain, and to encourage him to look forward to recovery. Still, it seemed to him that we cannot exclude pseudo angina altogether. We must recognize the fact, he thought, that we can have cardiac pain present, and yet not a true angina.

DR. CHARLES E. QUIMBY thought that the pseudo anginas might be regarded as a temporary anemia. The effect, which he believed was the important factor in the treatment by saline baths, was the relief of the capillary circulation. He then went on to speak of the modifying effect upon the heart of varying degrees of atmospheric pressure.

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ORIGINAL ARTICLES.

THE MODERN ASPECT OF TUBERCULOSIS.[1]

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IT is a reasonable assumption that, at this period, Koch's bacillus has a definite status, in general acceptation, as *the* factor in the direct etiology of all tuberculous diseases. It has satisfied every condition of proof that can be demanded, in that it conforms to the requirements of the formulated proposition to demonstrate that a given disease is caused by a specific organism: (1) It is present in all cases of the disease, and in such distribution as will explain the lesions. (2) It can be isolated in pure culture. (3) The disease is reproduced by inoculation with the isolated organisms.[1]

It may not be an entirely unprofitable task to review (though necessarily very briefly and superficially) the changes in the aspects of tuberculosis which have followed as direct results of Koch's discovery, and perhaps to indulge in a little speculation as to future prospects. We are still apparently a considerable distance from our goal—the ability to prevent the propagation of tuberculous disease and the means of treating it successfully when it occurs; but unquestionably a very distinct advance in our understanding and methods has been made. The investigations, of which the identification of the bacillus was the starting point, have at least demonstrated the fallaciousness of many older views and methods, and have given, if not definite results, at least most valuable indications of hygienic, therapeutic, and clinical possibilities which will, beyond doubt, work radical changes in the destinies of humanity.

There has been a great deal of diversity of opinion as to the exact rôle of heredity in relation to tuberculosis. Much importance has always attached to the transmission from parent to offspring of predisposition to tuberculous disease. To quote Billings,[2] "In most of the so-called hereditary diseases, that which is transmitted from parent to child is not the disease itself, nor its direct specific cause, but some peculiarity of tissues or organs which, in the course of development, either makes the person peculiarly susceptible to causes of disease acting from without or produces disorder itself by excess or defect of structure or function of some particular part. In scrofula, and in consumption and other forms of tuberculosis, the specific germ is very rarely, if ever, transmitted, inheritance giving only a special susceptibility to its action." Recent investigation seems to indicate that this view will be modified by further research, for tubercle bacilli have been found in seminal fluid by several observers,[3] [4] [5] and tuberculosis produced by inoculation of cultures made therefrom. The possibility of direct paternal transmission is slight, however, having been estimated at one chance in 22½ millions by one observer, taking into consideration the fact that impregnation usually takes place through the agency of one spermatozoid.[6]

Armanni succeeded in infecting a guinea-pig with typical tuberculosis by inoculation with the organs of a still-born child of a tuberculous mother.[7] Lehmann[8] reports the case of an infant of a tuberculous mother dying four days after birth with tubercles containing bacilli in the spleen, lungs, and liver. Tuberculosis of the placenta has been studied and described by Schmorl and Kockel.[9] In three cases observed, bacilli were found in the placenta, but in only one of them in the organs of the fetus. Bar and Rénon[10] demonstrated bacilli in the blood of the umbilical veins of children born of tuberculous mothers. Northrup reports a probable case of congenital tuberculosis examined *post-mortem* by him at the New York Foundling Asylum. General disseminated tuberculosis was found, and apparently the oldest mass was at the porta of the liver.[11] [12] Congenital tuberculosis in cattle has been observed not infrequently. What has been rather indefinitely known as scrofulosis is practically conceded to be tuberculosis, and that this condition is frequently congenital almost everyone will admit. A very interesting monograph, by Suchanneck of Zürich, which has appeared recently,[13] brings the subject of scrofulosis, in its relation to disease of the respiratory system, up to date; and he makes no distinction between it and tuberculosis.

The acquisition of tuberculous disease may take place through the integument by immediate inoculation of the poison on an abraded surface. Such processes are generally local, and instances are more or less familiar to us all of lesions which have occurred in our own persons, or in others who are exposed to frequent contact with infected material in the line of pathological or clinical work. Collins and Murray report three instances of infection by tatooing.[14] By some French authorities the ordinary bedbug is alleged to be an active agent in the transmission of tuberculosis. General infection is sometimes produced in this way, however, for Lehmann[15] speaks of ten boys who were circumcised by a tuberculous operator (who died from the disease shortly afterward). The wounds were infected by his saliva, and general tuberculosis and death supervened in seven instances, and three of the boys were living with tuberculous adenitis at the time of his report.

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[1] Read before the Kings County Medical Association, October 13, 1896.

Tuberculosis of the cervical glands has been caused by infection through the means of carious teeth. The disease has been also directly transmitted by the act of coition. Infection by the way of the alimentary tract has been held by some writers to be the most usual of all the possible ways. It occurs from the ingestion of intrinsically diseased milk or meat, or of food which, though originally pure, has become accidentally contaminated by the bacilli. The results of investigations as to the existence of tuberculous disease in cattle furnishing our ordinary milk-supply, as well as the frequency of the lesions in those slaughtered for meat, are, to say the least, startling, and in this connection, if in no other way, Koch's tuberculin has been of enormous utility in permitting the identification of diseased animals with practical certainty. The literature bearing on this special feature is so extensive already that in a paper of this kind it will be impossible to review it in even the most cursory manner. The entire subject of milk infection has been dealt with by Professor Ernst,[17] under the auspices of the Massachusetts Society for the Promotion of Agriculture. He found that bacilli are sometimes present in the milk of cows having no demonstrable lesion of the udder. This was determined by microscopic examination, as well as by inoculation experiments, and he also observed that feeding infected milk to animals caused tuberculous disease in a certain proportion of cases. Brush[13] alleges a direct and constant relationship between human tuberculosis and the use of dairy products as regular articles of diet. He shows in a way that is almost convincing that tuberculous disease is infinitely more common in communities where cattle are bred for dairy purposes than in those countries where their products are not used in this way, as, for instance, in Argentina, where, although there are in the neighborhood of twelve million head of cattle, no butter or cheese is produced, and where such a thing as a dairy farm is unknown. The indigenous population is practically immune. Roth of Zürich has found virulent tubercle bacilli in butter, in two out of twenty specimens examined.[19] What has been said of infected cows' milk is inferentially equally true of milk from diseased human beings, although I have no recollection of having seen any statements in regard to this point.

Occupying a position between the alimentary and respiratory systems as avenues of infection is the lymphoid tissue at the upper part of the two tracts. I refer to the tonsils—faucial, pharyngeal, and lingual. It has seemed to me that the facts which have been adduced as evidence of the part they play as starting-points of disease have been misunderstood, or magnified in importance. So-called "latent tuberculosis" of the tonsils was first described in detail by Dieulafoy.[20] He inoculated sixty-one animals with pieces of faucial tonsils, and tuberculous manifestations resulted in eight instances. Thirty-five inoculations with adenoid tissue gave positive results seven times. Lermoyez[19] reports two cases in which removal of lymphoid tissue from the pharynx seemed to give rise to generalized tubercular infection. In a later report he gave the proportion of tuberculosis to simple hypertrophy of the tonsils as one to seventeen; and in a third communication, as one to seventy-five. Schlenker, as a result of one hundred examinations, concludes that tonsillar tuberculosis is generally secondary to pulmonary disease.[22] Brindel of Bordeaux, after examining sixty-four adenoids, claimed to have found tuberculosis in eight, or 12½ per cent. of the cases.[23] Bacteriological investigation was practised in but one instance, and inoculation experiments in none, his diagnosis of tuberculosis resting on the histological discovery of occasional giant cells, which, it is needless to state, are found in inflammatory processes entirely distinct from tuberculosis, so that his results are practically valueless from a scientific standpoint. Chappell's case of general fatal tuberculosis developing after adenotomy,[24] is also assailable on the hypothesis, which from the clinical history seems very possible, that the tuberculosis of the pharyngeal growth was antedated by pulmonary disease. In this case, however, the diagnosis was certain; histological tubercle and bacilli were found and inoculations gave positive results. Several hundred adenotomies and tonsillotomies done during the past two years at the Brooklyn Eye and Ear Hospital have failed to reveal a single instance of tuberculous disease appreciable on *gross* examination. In a paper read this year before the American Laryngological Association, Wright[25] reports from his service at that institution examinations, microscopical, bacteriological, and by inoculation, which gave absolutely negative results in twelve consecutive unselected cases, and he reaches the perfectly logical conclusion that opposed findings have been due, in most instances, simply to surface contamination. This is further corroborated by the experiments of Strauss,[26] who in examining the nasal secretions of twenty-nine perfectly healthy individuals employed in a hospital where phthisical patients were treated, found virulent tubercle bacilli in nine cases.

The respiratory tract proper is probably the most frequent avenue of infection, and Hance's paper[22] on the "Infectiousness of Dust" gives a vivid picture of the ease and frequency with which the germs can be inhaled, and, on the other hand, the gratifying possibilties of simple means of disinfection and ordinary care. His investigations were carried out with great care and thoroughness at the Adirondack Sanitarium and certainly are an admirable object lesson to both the profession and the laity in the management of tuberculous patients. (See also Cornet.[62])

It is claimed by some observers that, irrespective of the channel by which the bacilli have gained entrance to the body, the lymphatic system is invariably affected before the lesions appear elsewhere. Northrup[11] found in a series of ninety-one autopsies made at the New York Foundling Asylum on children affected with tuberculosis, that the bronchial lymphatic glands exhibited signs of disease of apparently longer standing than any of the other organs. In thirteen of these cases the process was distinctly limited to them. Arnold[28] in experiments with reference to inhalations of dust by animals found that after a short inhalation the particles of dust might be identified in the bronchial glands. In inhalations of ultra-marine the particles were found after three hours, and after stopping the inhalations, though the bronchi and alveoli might be quite free of the particles, the glands were full of dust.

Aside from, perhaps, a better interpretation of the rational signs and subjective symptoms, comparatively little advance in the early diagnosis of tuberculosis has been made during the last fifteen years. Much has been written about the "pre-tubercular state"—"hypotrophy" antedating tuberculous processes, etc., but after extensive reading, and a not inconsiderable personal experience, I fail to find any distinctive particulars in which the prodromal stage of tuberculosis differs from that of any other chronic general disease before the characteristic changes have been made out. If certain physical signs can be definitely recognized, we are sure that we are right in our diagnosis, but their absence is by no means of equivalent value as indicating freedom from tuberculosis. Mensuration, as practised by Evans, may be a valuable aid in diagnosis. His method is very thorough, but rather too complicated and requires too much apparatus to be practically useful, except in the offices of specialists, or in institution work. (For full description of his Cyrtometer and Method of Application consult original article.[29])

The administration of tuberculin in the human subject, for diagnostic purposes, has been shown to be unjustifiably dangerous, and has been abandoned. The presence of the bacillus in the sputum, in such numbers and with sufficient constancy as to eliminate the factor of surface contamination above referred to, is of course pathognomonic, but at a time when this is likely to occur the expert diagnostician is usually able to decide on the evidence of the physical signs alone. Of course very many doubtful cases have been settled by bacteriological examination. It is, however, as true to-day as it was before Koch's discovery that we are in no position at any period before the evidences with which we have been long familiar can be made out, to say that our patient has or has not tuberculosis. A new line of investigation has been recently started which may lead to valuable results when its technic shall have been further elaborated and when sufficient experience shall justify reasonably definite deductions from the microscopical appearances. I refer to morphological changes in the blood occurring in tuberculosis. Holmes of Denver[30] has recently published an article on some original studies he has undertaken in this connection, and his paper has been supplemented by one from Denison.[31] Both papers are more interesting than practically valuable, but that in further and fuller observations in this line we may find a reliable means of early diagnosis seems, from what they say, not impossible.

As to prognosis, I think that it can be definitely stated that tuberculosis is at the present time an incurable disease. By this I mean that it is incurable as are also typhoid fever, smallpox, and many of the other specific diseases for which we have as yet found no direct antidote. Probably at least as many patients recover from tuberculous lesions as succumb to them; this is a matter of clinical and pathological experience. I question very seriously, however, whether any form of treatment which has yet been practised has directly modified the tubercular process in the slightest degree. These apparently paradoxical statements I shall try to explain later on.

There is generally present in tubercle a tendency to resolution, and spontaneous arrest of the process and involution of its products occur frequently, apparently entirely irrespective of any attempts at medication. There have been strides during the last decade, if not in treatment at least in prophylaxis, as applied to the community as well as to the individual, which have borne fruit of very distinct character. The appreciation of the methods of propagation has logically brought with it the suggestion of remedies adapted to their requirements. The first systematic attempt at sanitary supervision of tuberculosis was made in New York in 1893, and in spite of much opposition it has already had the result of appreciably decreasing the relative mortality from this disease. The few simple rules of disinfection and individual care necessary to limit the spread of tuberculosis are too generally understood to require elaboration. The circular published and distributed by the New York Board of Health has been of practical use in making clear to the lay mind the characteristics of tuberculous disease, and that the recommendations contained in it have had some effect is evidenced by the decrease in the death-rate from tuberculosis. That the mere suggestion of such simple measures, without any attempt to enforce compliance with them, has been followed by tangible results in so short a time is a most encouraging indication that a more extensive dissemination of knowledge, combined perhaps with a little more latitude and power in the exercise of the functions of sanitary boards, may in time inhibit the spread of tuberculosis to almost the same limit to which the propagation of smallpox is now confined. (For detailed information as to what has already been accomplished in this direction I refer, among a large number, to papers by Biggs and Huddleston,[32] and Hance,[27] and to the report of the meeting of the Section on Public Health of the New York Academy of Medicine, November, 1895.[33]) Radical measures in this direction are impracticable and unwise; results are more likely to be attained by work on educational lines than by direct legislation.

Sanitary supervision of the food supply can and should be conducted in a more vigorous way. The imperative need for strict supervision is shown by the fact that in one year of the cattle slaughtered in Berlin for food 21,000 were found to have tuberculosis. An inspection of the cattle in the kingdom of Saxony showed them to be affected in the proportion of one to seven of the oxen, and one to four of the cows.[34] Similar statistics might be quoted indefinitely, but all show the same facts and teach the same lesson—the enormous prevalence of tuberculous disease among the domestic animals, and the importance of the most energetic and systematic efforts to eradicate it. (See, also, E. F. Brush, "Consanguineous Breeding," etc.[35])

The principles underlying individual prophylaxis are too well appreciated to require more than a passing mention, though, unfortunately, they are rarely carried out as they should be. Proper nourishment, clothing, habits, fresh air, exercise, and the strengthening of weak places and the avoidance of the possibilities of infection, have been written on voluminously.

I shall not enter into a discussion of the treatment of tuberculosis as bearing on the general management, nor in relation to the special symptoms, except in passing. Climate has been always a much-discussed therapeutical resource in tuberculosis, and perhaps no one agent at our command has been so extensively abused, misunderstood and misused. The fact that certain cases of phthisis have improved at special health resorts has in many instances seemed to be a sufficient reason for referring to these localities *all* patients with consumption, entirely irrespective of the character of the disease, its stage, complications, or other features which might modify to a marked degree the effects of the special climatic conditions. The indiscriminate prescription of climatic change, without due regard to the exigencies of the individual case, has probably done more harm, shortened more lives, and destroyed more possible chances of recovery among consumptives, than ignorance or faulty application of any other remedy that has ever been employed in the treatment of phthisis. "One of the chief reasons of the climatic benefits of sea and mountain air is the absence of poisonous and irrirating substances floating in it."[36] That, I believe, contains the gist of the whole question of climato-therapeutics, other things being equal. To generalize, I believe that the ideal climate for the average consumptive is not at any special station nor at any given altitude, but where is found pure air free from contamination, in a reasonably equable, moderate climate, with good drainage, and where the percentage of moisture is approximately normal and not subject to great variation. To such a place there is no rational objection to sending *any* patient who is fit to leave home. I do not question that there have been many recoveries at high altitudes; but many patients have been irretrievably harmed by a residence in them. The contraindications for altitude are sufficiently definite to enable us to select, with fair judgment, the patients who can stand the conditions and who are likely to be benefited. The ideal resort, as I have outlined it above, is most likely to be found, in our country, at a moderate elevation—from 1500 to 2500 feet—and its name is legion. Many climatologists have written about an "Altitude of Immunity." Denison places it in Colorado at an elevation of approximately 6000 feet.[37] It may exist *somewhere*, but probably at a height which is immune from human as well as germ life. That this idea is rather chimerical is evidenced by the fact that one of the observers employed at the Signal Service Station on Pike's Peak, 14,000 feet above sea level, developed *there* a fatal pulmonary tuberculosis some years ago.

That it is a question more of an aseptic atmosphere, with reasonably favorable prevalent meteorological conditions, than one purely of altitude and rarefaction of the air, can be deduced from the progressive contamination of health resorts. To such an extent has this occurred that I understand that the State Board of Health of Colorado (where are located some of our most popular high-altitude stations) is seriously considering the advisability of placing an embargo on the immigration of any more tuberculous patients, as a matter of self-protection. And in this connection, I cannot help quoting verbatim the following in reference to a once widely known and popular health resort:

"Forty years ago, Mentone was a healthy village in France, where lived peasantry on their farms, happy in their superb physical state conditioned by the climate. It was discovered that the region was a most healing climate for consumptives, and it became the Mecca for the unfortunates of Europe so stricken. The strong, healthy women forsook their dairies and became the washerwomen of the consumptives' clothes. No precautions were taken; the disease was not understood then, as now. The place is to-day bacillus-ridden, a pest-hole—death itself. The hitherto strong inhabitants are emaciated, a coughing, bleeding people, filled with the germs of consumption. The soil and air are both contaminated with them. It is no longer a resort."[38]

J. A. Lindsay[39] tersely expressed the present aspect of the climatic treatment of phthisis in the following words: "Climatic change is a snare, rather than a help, a curse rather than a blessing, if it be regarded as a complete therapeusis in itself and as enabling the patient to dispense with the usual lines of treatment and his customary precautions. Climate is not a specific; at best it is only a condition of cure; and we may expect it to be effectual only when the patient's food, habits, occupation, and mode of life are wisely regulated so as to facilitate its beneficent influence."

In this relation, a word about ozone, of which we hear so much in connection with the beneficial attributes of health resorts. Very little is actually known about it. Most chemists regard it as allotropic oxygen, the molecule containing three atoms of oxygen. It is present in atmospheric air in the proportion of one part in 700,000. "The value of its presence would appear to be more an evidence of atmospheric purity than as a disinfectant, as it is absent when injurious decomposition is going on."[36] Thompson,[40] as a result of his experiments on the action of ozone and its compounds, reaches the conclusion that "ozone is of no value to the tissues, whether inhaled or drunk in fluid preparations, and it may be exceedingly harmful."

Preliminary to a consideration of the direct application of medicinal agents in the treatment of tuberculosis, it is well to realize exactly the conditions with which we have to deal. Here comes in a fact of the greatest possible importance, and a true understanding of it will doubtless furnish an explanation of some of the failures of the past, and indicate the chances of future success. We have been a little too prone to consider that tuberculosis consists merely of the presence in the organism of a specific bacillus and the formation of histological tubercle, and that the subsequent symptoms directly result from this combination. But these conditions do not, by any means, constitute the disease as we see it clinically. Tuberculosis rarely, if ever, runs its course as tuberculosis pure and simple. If it did, we could, perhaps, treat it with more success than we have hitherto attained. Some perversion of nutrition must exist before the bacillus can find a favorable soil for its development, and even then the process of the evolution of the disease, as evidenced by the increasing metabolic changes in the organism, the phthisis would probably be a very much more chronic and less serious matter, were it not for the complication of other bacterial infection. As a matter of common observation, patients rarely feel particularly debilitated, and are much more amenable to treatment before the stage of softening, and this is due to the fact that at this time the influence of other bacteria begins to be a factor in the disease, and becomes after a time the predominating element. Streptococci find in the diseased lung-tissue a fertile soil for multiplication and growth, and as a result we have superadded to the tuberculous process itself a continuously operating source of pyemic and septicemic phenomena which sap the patient's vitality and resisting powers and make him eventually a victim (though generally in an indirect way) to a poison which he might be able to withstand had it come singly.

Here we are tempted to ask ourselves what our present knowledge and the resources at our command warrant us in definitely expecting in the treatment of tuberculosis. As regards *direct*, *specific* influence on the bacillus, little or nothing (though we may modify this later on); as regards the patient, everything, even up to a condition of relative recovery. Up to the time of the discovery of the bacillus, the treatment of tuberculous disease by means of drugs was symptomatic and very largely empirical. Two of the remedies that were very widely employed in the general routine treatment are still considerably in evidence—the hypophosphites and cod-liver oil. Aside from their general tonic and alterative effects, the hypophosphites of lime and soda have been administered in the hope of promoting or producing calcification of tubercular areas. It is highly improbable that they ever assisted in this process to the slightest degree. Cod-liver oil has been administered as a matter of routine in larger quantities than any other remedy. My personal experience has led me to the opinion that it is *very much worse than useless.* The most that I have ever felt justified in hoping from it has been that it would *not do harm.* I have *never* seen it act beneficially. Patients who improve during its administration, do very much better, as a rule, after discontinuing its use. "It acts as an alterative, by changing decidedly the oxidation processes of the system. But, unfortunately, its alterative effects are in the wrong direction, decreasing the perfection of the proteid oxidation and often depriving unfortunate patients of the single chance of recovery which they might otherwise have retained. The free ingestion of it rapidly decreases the urea in the urine, and increases the incomplete or imperfect products of nitrogenous waste. The more perfectly it is emulsified, the more detrimental it becomes, because, thus, it is more palatable, and is less likely to produce digestive disturbance, and to be, therefore, refused entrance to the system. The emulsion also favors the absorption of an immoderate quantity, thus exhausting the oxygen supply and rendering the sub-oxidation of the proteid molecule, with all its ill-effects, doubly certain. It disturbs digestion and prevents the utilization of other and more valuable forms of food stuffs."[41]

Since the identification of the bacillus, every effort has tended toward the discovery of some agent (and a suitable means of applying it) which would directly destroy the germ and aid in its elimination from the organism, or, at least, inhibit its growth and neutralize its toxic influence. William Pepper was, I believe, the first to suggest and practise intrapulmonary injections as a means to attain this end. His method was used quite extensively for a time, but has now been practically abandoned. The results were not striking, the procedure was painful, and it has been displaced by other methods. The injections were made directly into cavities, with the purpose of disinfecting them and acting immediately on the contained bacilli. I have repeatedly seen a marked diminution in the secretion of cavities as a result of these injections, and a consequent improvement in the general symptoms resulting from pus absorption. Injections into tuberculous lung-tissue, which was merely infiltrated and not broken down, have, in my limited experience with this method, produced no benefit.

In 1855 Brainerd of Chicago opened a cavity in a tuberculous lung through the thoracic wall. In 1873 Mosler of Germany opened, drained, and medicated cavities locally. Though surgical intervention in tuberculous disease can be, and is, undertaken to-day with much greater confidence and chance of success than in former times, the operations of pneumonotomy and partial pneumonectomy in tuberculous disease must necessarily have a very limited field of applicability; ordinarily they are not indicated when the patient is in a sufficiently good condition to stand them, and in advanced cases they are but a forlorn hope at best. The recourse to surgery in diseased conditions is, after all, but a confession on our part of our limitations; and while we are compelled to admire the ingenuity and skill of the modern surgeon, and to be grateful that he can practically atone for the physician's shortcomings, surgical cures of disease are neither more or less than compromises.

Much was expected from the inhalation of antiseptics in tuberculosis. They were used extensively for a time, but have recently fallen into general disrepute. The form of inhaler usually employed has been so entirely inadequate to the requirements that little could be expected from it. The most popular in European countries has been some variety of the ori-nasal respirator, or some equally crude device, and the patient used it perfunctorily and without benefit. The amount of medicament capable of being administered by these means is insignificant, and probably does not reach further than the pharynx. The objections advanced against inhalations are that they do not reach the seat of disease, or, granting that they may, that the amount or concentration of the medicament used is too attenuated to be of value. That these criticisms of the ordinary respirator, or portable inhaler, are perfectly valid is undeniably true, but they can scarcely be advanced in regard to the vaporizing spray-inhalers which are used by many physicians in this country, and particularly when they are employed with some form of compressed-air apparatus, as in Evans' latest inhaler, Waldenburg's gasometer, or the pneumatic cabinet of Williams.

Protracted, continuous inhalation of medicines thoroughly nebulized under high pressure must necessarily bring them into contact with the entire pulmonary mucous membrane. While, of course, a few respirations do not carry the nebulized medicament into the finer tubes or alveoli, after breathing such a vapor exclusively for a length of time the residual air must become impregnated with it. The experiments of Arnold, previously mentioned,[28] demonstrate that dust *does* penetrate to the bronchial glands, and there seems to be no rational refutation of a similar action on the part of any other physical substance in a much more finely subdivided state. As regards the degree of concentration of antiseptics which can be administered, it is quite possible to give inhalations of a thirty-per-cent. solution of pure carbolic acid, or of the essential oils, like eucalyptol, *without dilution.*

Cough can be controlled and the lungs freed of accumulated secretions much more effectually by appropriate inhalations than by means of any medicines given internally. While there is very little probability that antiseptic inhalations have any distinct effect on the tubercle bacillus, it is quite easy to demonstrate that they do influence, very materially and definitely, the course of phthisis as we see it clinically. They modify or neutralize the effects of pus absorption. A sufficiently long inhalation will reduce a pyemic temperature almost as promptly, much more lastingly, and with infinitely less general depression than any of the antipyretic drugs, and this effect can be uniformly relied on. If these claims are susceptible of substantiation, as I believe they are, then certainly antiseptic inhalations have a position in the therapy of tuberculosis as enviable as anything can be short of a specific. Inhalations, properly employed, tend to relieve cough, aid expectoration, and control septic fever, and, in view of these capabilities, and by reason of the improvement in the nutrition of the lungs from the coincident exercise, I believe we can say that their influence is actually curative, though, of course, indirectly so. Trudeau used, for a time, inhalations of the vapor of hydrofluoric acid, and claimed to have distinctly affected the bacilli.[42] Hot air inhalations, with a view to their bacillicidal action, had quite a vogue a few years since. The results were *nil*, for it was soon proven that by the time the inspired air had reached the pharynx it had cooled to the temperature of the surrounding tissues. Gaseous inhalations have been popular and of considerable benefit in certain conditions. Valenzuela[43] advocated inhalations of sub-oxygenated air, as lessening the hyperoxygenation of the blood and the increased tissue-waste in florid conditions, and claimed by admixture of certain proportions of carbon dioxid to exactly reproduce the effects of varying degrees of altitude. In appropriate doses carbon dioxid is not poisonous and it is said to have the power of producing cicatrization of cavities and ulcerations.. Nitrogen monoxid is a constituent of the so-called "Compound Oxygen," and its anesthetic and sedative properties make it often of decided benefit. Bergeon's plan of gaseous enemata certainly was valuable, though disagreeable and complicated in its application. Inhalations of chlorin have been used, off and on, since the beginning of the century, and, in recent years, have been employed with benefit as part of the treatment of Shurly and Gibbes. Of more recent date is the procedure advocated by Carasso of Genoa,[44] consisting of continuous inhalations of oil of peppermint, with creosote internally, combined with super-alimentation. His conclusions seem to have been gratifying to himself, but the method has been without startling results in the hands of others. Hauke in 1870 constructed the first machine for the inhalation of compressed air. It has had many successors more or less elaborate. Among the most valuable is undoubtedly the pneumatic cabinet of Williams, which came into general use in 1885. At first it excited a great deal of interest and discussion, but gradually lapsed into oblivion (except in the work of some few men), quite as undeservedly as many other valuable discoveries. After nearly eight years of almost daily use I can quite agree with Quimby[46] that it is capable of immense benefit if it is used judiciously and with due appreciation of its capacities. Waldenburg's gasometer apparatus is also of decided value in certain cases.

Intratracheal injections have been employed with a fair amount of success in many instances. They seem to have a somewhat similar action to antiseptic inhalations, and have the advantage of not requiring so much cumbersome apparatus. I have used them with apparent benefit on many patients, and usually employ a solution of guaiacol and menthol in sweet almond oil. (See article by Barton.[45])

In the treatment of tuberculosis of the upper air passages the achievements of Herying and Krause, by curettage and excision of involved areas and the application of lactic acid, have enabled us to treat, with a large chance of success, the hitherto intractable and terrible lesions which occur in the pharynx and larynx. In our own country, Gleitsmann[47] has probably done more successful work in this direction than any of his colleagues. The method of direct injection of creosote into diseased tissues, proposed and practised by Chappell of New York,[48] has been, in many instances, brilliantly successful.

The hyodermatic, or more properly, intramuscular injections of medicaments seem in the main to have as their object the stimulation of leucocytosis and phagocytosis. Among them are to be mentioned Liebreich's injections of cantharidinate of potassium,[49] the Shurly-Gibbes injections of iodin and bichlorid of gold,[50] Landerer's injections of cinnamic acid,[51] and Edison's recent Aseptolin, beside a host of others. Vaughan's elaborate researches on the nucleins and their therapy are in the same line.[52] Iodoform, ichthyol, creosote, guaiacol, and most of the modern antiseptics have been used in the same way, and with varying degrees of success. The antithesis of hot air inhalations—persistent and continuous lowering of the body temperature—has been advocated for its theoretical bacillicidal action by Reed, who gives antifebrin as often as the temperature reaches 101° F.[53]

The drug most widely used to-day in the internal treatment of tuberculosis is creosote or some of its derivatives. It was first systematically investigated and brought to the attention of the profession by Sommerbrodt.[54] It is of undoubted value, though its exact status and the preferable preparation is not settled, but it is very questionable that it exerts any direct influence on tuberculosis.

Perhaps the first attempt to directly affect the bacillus by the influence of bacteriological products was made by Cantani of Naples who endeavored to attain this result by inhalations of cultures of the bacterium termo.[55]

Before Koch's announcement of the results of tuberculin therapy several observers had remarked a modification of the tuberculous process from thorough and repeated vaccination. The enthusiasm caused by the first exploitation of tuberculin, the subsequent distrust and disappointment, and its final repudiation by the profession at large, are of too recent occurrence to make it necessary to recall them. That the wholesale rejection of Koch's theories was as unjust and illogical as their first pyrotechnical acceptation is evidenced by the results of the work of a few conscientious, careful men in our own country, who have not allowed themselves to be swayed by popular clamor, but have determined to find out the truth for themselves. The efforts of Klebs to prepare a serum free from the objections of the first crude preparations have given us tuberculocidin and antiphthisin, each an improvement on its predecessor. They have been used by many clinicians with most promising effects. Among our compatriots Denison,[56] Trudeau,[57] and Von Ruck [58] [59] [60] [61] lead in their results. In his Sanitarium at Asheville, N. C., Von Ruck has used these products extensively and with effects which, if they are not yet *brilliant*, are most promising for the future. That in the line of the work that he is doing, with facilities equaled probably by none in this country, will be found (if it is not *already* found) a specific for tuberculosis, is a hope that is not entirely utopian.

Specific medication naturally applies only to a particular, definite, uncomplicated, pathological condition, and therefore it is well to remember in our search that we must not neglect, in striving for our comprehensive, all-embracing, ideal remedy, the broad principles of general treatment, as well as the minute details which will help our patients (very possibly cure them), until the remedy shall be given to us.

The modern treatment of tuberculosis presents itself to my mind with a double side: (1) That we must by all our resources, pre-natal, prophylactic, hygienic and sanitary, limit, and perhaps finally eradicate, the disease. (2) When it does occur, that we must use every endeavor by means of inhalations, injections, internal medication, climate, diet, *anything*, *everything*, which we can command, to eliminate the complicating infections and leave the tuberculous process to be dealt with by the specific which *will* come, if it is not already here. *Then* tuberculosis will lose its terrors, and the names of Koch and his co-workers and successors will be transmitted to posterity, as the greatest benefactors humanity has ever had. By means of sanitation and of serum-therapy (undoubtedly *the* therapy of the future), mankind will, at last, reach a point where (barring fortuitous accidents) the alloted span of life will be achieved, and the end of each human being will be Euthanasia.

BIBLIOGRAPHY.

[1] Pepper's Text-book of Medicine, vol. ii, p. 23.

[2] Pepper's Text-book of Medicine, vol. 1, p. 7.

[3] Sollis, *Journ. Med. de Bordeaux*, 1892.

[4] Spano, "*Récherches Bacteriol. sur la Sperme*," etc., *Revue de la Tuberculose*, No. iv., 1893.

[5] Foa, *Gazetta degli Ospedali*, 1892.

[6] Jäckh, *Virchow's Archiv.*, No. 142, Hefte 1.

[7] Armanni, *Internat. Aerztl. Kong.* (Abteil-Hygeine.)

[8] Lehmann, *Berlin. klin. Woch.*, July 9, 1895.

[9] Schmorl and Kockel, *Beiträge zur Path. Anat.*, xvi, Part 2.

[10] Bar and Rénon, *Comptes rend. de la Soc. de Biologie*, July 5, 1895.

[11] Northrup, "Tuberculosis in Children," *N. Y. Med. Journ.*, February 21, 1890.

[12] H. Neumann, *Deutsch. med. Woch.*, November 9–17, 1893.

[13] Suchanneck, "*Uber Scrofulose*," etc. Karl Marhold, Halle, 1896.

[14] Collins and Murray, MEDICAL NEWS, December 8, 1894.

[15] Lehmann, *Deutsch. med. Woch.*, No. 9, 1886.

[16] Frankenburg, *Münch. med. Woch.*, 1893, No. 17.

[17] Ernst, "Infectiousness of Milk," Boston, 1895.

[18] E. F. Brush, "Coincident Geographical Distribution of Tuberculosis," *N. Y. Med. Journ.*, March 8, 1890.

[19] O. Roth, *Correspondenzblatt f. Schweiz. Aertze.*

[20] Dieulafoy, *Bull. Acad. de Med.*, 1895.

[21] Lermoyez, *Bull. Soc. med. des Hôpitaux*, July, 1894.

[22] Schlenker, *Virchow's Archiv.*, cxxxiv, 1 and 2, 1893.

[23] Brindel, *Revue hebdom. de Laryngol., etc.*, Nos. 30 and 31, 1896.

[24] Chappell, *Journal of Laryngology, etc.*, September, 1896.

[25] Wright, Trans. Amer. Laryngol. Assn., 1896.

[26] Strauss, *Münch. med. Woch.*, No. 28, 1894.

[27] Hance, "Infectiousness of Dust," *N. Y. Med. Record*, vol. xlviii, p. 903.

[28] Arnold, "*Untersuchungen über Staubinhalationen*," etc., Leipsic, F. C. Vogel, 1885.

[29] G. A. Evans, "Mensuration in Physical Diagnosis," etc., *Brooklyn Med. Journal*, November and December, 1893.

[30] Holmes, "Diagnosis of Tuberculosis," etc., *N. Y. Med. Record*, No. 1348.

[31] Denison, "Microscopical Proof," etc., *N. Y. Med. Record*, No. 1348.

[32] Biggs and Huddleston, "Tubercle Sanitation," *Am. Journ. Med. Sciences*, January, 1895.

[33] Meeting Section Public Health, N. Y. Acad. Med., *N. Y. Med. Record*, No. 1307.

[34] *Münch. med. Woch.*

[35] E. F. Brush, "Consanguineous Breeding," etc., *N. Y. Med. Journ.*, June 28, 1890.

[36] Solly, article on "Climate," Hare's System of Therapeutics, vol. i.

[37] Denison, "Rocky Mountain Health Resorts."

[38] *Food and Sanitation*, January 18, 1896.

[39] J. A. Lindsay, London *Lancet*.

[40] W. G. Thompson, "Notes on Ozone Preparations," *N. Y. Méd. Record*, No. 1217.

[41] Merck's Bulletin, 1892, No. 11.

[42] Trudeau, *N. Y. Med. Record*, May 15, 1888.

[43] Valenzuela, quoted from "Tuberculosis," Hare's System of Therapeutics, vol. i.

[44] Carasso, *Wiener Med. Presse*, 1894, xxxv, p. 1466.

[45] Barton, "Intratracheal Injections," *N. Y. Med. Record*, August 1, 1896.

[46] Quimby, "Pneumatic Cabinet," etc., *International Med. Mag.*, January, 1893.

[47] Gleitsmann, "Surgical Treatment of Laryngeal Tuberculosis," Trans. Amer. Laryng. Assn., 1895.

[48] Chappell, *N. Y. Medical Journal*, March 30, 1895.

[49] Liebreich, *Berlin. klin. Woch.*, February, 1891.

[50] Shurly-Gibbes, *Therap. Gaz.*, April, 1891.

[51] Landerer, *Deutsch med. Woch.*, vol. xix., p. 204.

[52] Vaughan, MEDICAL NEWS, December 15, 1894.

[52] Reed, *Australian Med. Journal*, February 20, 1895.

[54] Sommerbrodt, *Berlin. klin. Woch.*, 1891, No. 4, p. 1048.

[55] *London Medical Record*, November 16, 1885.

[56] Denison, "Antiphthisin," *N. Y. Med. Record*, July 20, 1895.

[57] Trudeau, "Antiphthisin," *N. Y. Med. Record*, December 21, 1895.

[58] von Ruck, *Therapeutic Gazette*, October 16, 1893.

[59] von Ruck, "Etiological Treatment of Pulmonary Tuberculosis," *Therap. Gaz.*, March 15, 1895.

[60] von Ruck, "Present Status of Pulmonary Tuberculosis," April, 1895.

[61] von Ruck, "Report of 182 Cases Treated with Tuberculocidin and Antiphthisin," *Therap. Gazette*, May 15, 1896.

[62] Cornet, *Zeitschrift f. Hygiene*, 1888.

EXPLORATORY INCISION IN THE TREATMENT OF CLOSED FRACTURES AND DISLOCATIONS.[1]

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COMPLETE reduction, exact restitution of contour, and perfect retention, are the conditions of full success in the treatment of fractures. Deformity, impairment of articular movement, non-union, and neuralgic pain are remote results of failure to obtain these desirable conditions. Since aseptic surgery has made possible the prevention of infective inflammations in most open fractures, it is quite probable that better reduction, coaptation, and retention result in open than in closed fractures of the same grade and character of bony lesion.

The recent application of skiagraphy to surgical diagnosis has proved that fractures seemingly well reduced and properly dressed with splints may be the seat of considerable deviation from the normal skeletal relations. At the Polyclinic Hospital recently, for example, a fracture of the middle of the radius, supposed to be well reduced and dressed, was shown, by the use of the Röntgen ray, while the splints were in position, to have its fragments overlapping to the extent of about half an inch. In another case a painful swelling at the seat of a former injury to the fibula was discovered to be due to unrecognized non-union at that point. The rigidity of the tibia prevented the lack of union of the smaller bone being detected, but skiagraphy showed it plainly.

Nearly twelve years ago I advocated conversion of closed fractures of the cranium into open fractures by incision of the scalp, whenever uncertainty as to the character of the cranial lesion was prejudicial to intelligent treatment.[1] As part of my argument I said that no surgeon would hesitate to convert a closed recent fracture of the thigh or leg into an open one if it were impossible to replace fragments which were threatening life. I admitted that closed wounds are less serious than open ones, but asserted that with modern surgical methods, open wounds are preferable to closed wounds having inherent dangers that cannot be recognized without opening them. Further consideration and experience convinced me that this method should be extended to fractures in the limbs, even when life was not threatened, if obscurity of lesion or difficulty in reduction jeopardized function. Accordingly, a few years later,[2] I gave it as my opinion that recent fractures of the lower end of the humerus might with propriety be subjected to exploratory aseptic incision, if satisfactory coaptation was not obtainable under anesthesia; and that such action, though it involved opening the elbow joint, was as legitimate in properly selected cases as the recognized exploratory incision made in obscure abdominal conditions.

My belief in the propriety and value of exposure of the fragments in a certain limited number of closed fractures has been strengthened as years have passed. The method, which I do not claim as novel, has, however, not been sufficiently impressed upon the profession to cause its adoption by surgeons in general. Allis of Philadelphia has advocated it[3] in rebellious fractures of the upper third of the shaft of the femur, in order to apply steel screws for retentive purposes. In England, Lane has employed it[4] in oblique fractures of the tibia and fibula near the ankle, for the same reason. McBurney[5] and others have resorted to it in fracture of the upper end of the humerus complicated with dislocation. Dennis[6] and Ricard[7] also approve of it in cases where there is difficulty in obtaining correct apposition of fractures. Other writers may have mentioned the subject, and cases may have been occasionally reported; but, except in fractures of the cranium and patella, I think that most surgeons are more apt to be satisfied with imperfect results than to advise immediate exposure of the fragments before the patient comes out of the anesthesia induced for the purpose of examining and reducing the fracture.

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[1] Prepared for the Second Pan-American Medical Congress, November, 1896.

This attitude of the profession in general has been evident in societies at which I have incidentally mentioned my views;[8] and is due to conservatism bred by the fear of open fractures felt by all in the pre-antiseptic period of surgery. The method has suggested itself to many practical surgeons, but it needs to be ever before our minds as a legitimate procedure.

My advocacy of cutting down upon closed fractures is limited to cases in which ignorance of the exact lesion, impossibility of reduction, imperfect immobilization, or failure to deal efficiently with complicating lesions makes the incision the less of two evils. An aseptic incision is almost devoid of risk, even if it opens a joint; but that slight risk should not be added to the patient's burdens unless the probability of deformity, of interference with joint movements or other functions, of pain, of paralysis, or of non-union justify it. Here, as in all departments of surgery, it is the surgeon's duty to exercise care and good judgment in selecting the method of treatment. To illustrate my meaning I cite fracture of the patella, which I have never treated by incision and suture of the bone, because I have thus far always been able to satisfactorily bring the fragments together by hooks, subcutaneous suture, or splint. In one or two instances I have almost decided to lay open the overlying tissues in order to obtain approximation by direct appliances, but I have finally not been obliged to do so. The open operation I believe to be legitimate, and probably needful in a very few selected cases, but I am opposed to it as a routine treatment.

It is self-evident that the wound exposing a fracture must be aseptic, and that the operator who adopts incision must be familiar with the steps to be pursued at the inception of infective inflammation. A man who will hesitate to reopen the wound or drain the joint, at the moment septic premonitions show themselves, should associate a more energetic surgeon with himself in such operative treatment of fractures. The risk of incising muscles and opening joints, if done in an aseptic manner by an operator familiar with truly aseptic and antiseptic surgery, is unquestionably very slight. Primary union without disturbance of joint-function will be almost universal.

If it once be admitted that the seat of a fracture can be exposed by incision, with little or no risk to life, there are many advantages that will at once suggest themselves:

1. The exact lines of separation can be seen, and the significance of lines of comminution in relation to subsequent reconstruction can be fully appreciated.

2. Coaptation need no longer be guessed at by the sensations imparted to the examiner's fingers, separated as they are from the bone by varying thicknesses of muscle, fat, and skin; nor need it be dependent upon the possibility of having conveniences for taking a skiagraph.

3. The fragments can be accurately fitted together, torn periosteum replaced, and muscular and fascial bands, nerves and muscles disentangled from undesirable positions between the pieces of broken bone. This prevents deformity by permitting restoration of normal contour of the limb, and lessens the occurrence of non-union, neuralgia, atrophy, and ankylosis.

4. When the osseous, muscular, and vascular relations have been restored, they can be perfectly maintained by the application of sutures, pegs, nails, screws or ferrules to the bone, and sutures or ligatures to the muscles, nerves, and vessels.

5. The pain, due to extravasation of blood, rapid inflammatory exudation or traumatic synovitis, is relieved by the removal of the clots and leaking out of exudation and synovial fluid. The interstitial pressure caused by extravasated blood and exudate has often heretofore caused surgeons to split the skin and deep fascia by long incisions, in very bad fractures, in order to avert threatened gangrene. A similar relief of tension in less urgent cases will undoubtedly lessen pain and suffering, though such operative treatment would ordinarily not be adopted. The incisions employed to uncover the fractures are therefore indirectly of value as relievers of pain.

6. Pain is also lessened, in the few cases requiring direct retentive apparatus, because the sutures, nails, or screws prevent motion between the fragments better than external splints. Muscular spasm or incautious movement has therefore little opportunity to cause suffering.

7. Fat embolism is probably less likely to occur in fractures liable to its occurrence, if early escape for the fatty *débris* is permitted by incision.

8. Ankylosis from faulty position of fragments, irregular formation of callus due to stripped up periosteum, and gluing down of tendons, will seldom occur after the fracture has been disclosed to the scrutiny of a competent surgeon.

9. Repair of the broken bone and functional restitution of the surrounding tissues occur more rapidly than when coaptation is imperfect, or when damaged, muscular and other structures are left to the unaided efforts of nature. Impairment of digital movements after fractures is probably often due to coincident rupture or laceration of muscles, which

might have been repaired by suturing with catgut, if the surgeon had known of the existence of the complication. The aseptic wound affords him this opportunity; and afterward usually heals so rapidly that it is of no disadvantage to the patient's period of convalescence. This early restoration of wage-earning capacity is of great value to many patients.

10. It not infrequently happens that a closed fracture seems to have been well set, and to have left little deviation from the normal; and yet the patient has lost some of his availability as a machine. This is most likely to occur in the lower limb which, during locomotion, carries the entire weight of the man. A slight change in the axis of a bone or in the plane of an articulating surface may perhaps throw the weight upon the hip, knee, or ankle in an abnormal way and induce a considerable and ever increasing disability. This contingency is usually avoidable after the accurate inspection of the injured bone permitted by uncovering the fracture by incisions.

In vicious union of fractures due to absence of treatment, or to injudicious treatment, I believe that it is sometimes much better to expose the seat of deformity and divide the deformed bone with an osteotome than to refracture subcutaneously by an osteoclast or the surgeon's hands. Many cases can indubitably be well treated by refracture without incision or by subcutaneous osteotomy; but if there be a reasonable doubt as to one of these methods enabling the surgeon to accomplish relief of the deformity, free exposure, such as I have just been advocating in recent fractures, is the proper treatment.

A similar method of dealing with luxations which are not readily reduced by manipulation under anesthesia is, in my opinion, preferable to a long continuance of unsuccessful manipulations, the application of great power by apparatus, or a relinquishing of the attempt to restore the integrity of the joint. It is true that in all dislocations, except those of the spinal column and the backward luxation of the second phalanx of the thumb, reduction is usually readily accomplished by skilful manipulation under anesthesia, provided the attempt is made while the injury is recent. My contention is that in recent dislocations, when this is not the case, and in old dislocations, arthrotomy should be promptly done. No surgeon would recommend allowing the displacement to remain without attempting reduction; and I believe that compound pulleys or other methods of applying great force are usually more risky than prompt and thorough exposure by incision. Immediately before making the incision it would be well in most cases to make a final effort to reduce by manipulation; but this should not be carried to a sufficient extent to cause much bruising or muscular laceration. The presence of such traumatism would increase the liability to septic processes, if imperfect asepsis allowed germs to gain access to the wound during the operation.

Arthrotomy for irreducible dislocation is not a novel suggestion, for it has been repeatedly done by many surgeons in old injuries. It has not, however, I think, been often adopted until after vigorous efforts have been made to subcutaneously replace the separated articular surfaces. Its use in luxations a few hours or a few days old, except perhaps in the fingers and toes, is probably almost unknown as an accepted surgical procedure. I believe it ought to be the approved treatment in a small number of cases. The advantages of the open method will at once be patent when the accidents that occasionally follow the employment of the older methods are recalled. Fracture of the bone or laceration of artery, vein, or nerve, is only likely to occur when the region is not exposed to the operator's eye, In case of impossibility to properly reduce the dislocation, moreover, the end of the luxated bone can be excised. This will probably nearly always give a better functional result than to allow the previous condition to persist. Excision is not infrequently required after attempts to reduce old luxations without incision have proved unavailing. In an attempt to reduce an old luxation of the humerus I have displaced the head of the bone in such a way that it rested on the brachial plexus and caused more trouble than the original deformity. This would not have been the result, I think, if I had exposed the luxated bone by arthrotomy. If the open treatment is to be adopted it is evident that the patient will receive the greatest advantage if it be instituted before the head of the bone is altered in shape, the socket changed, and muscles and fasciæ contracted or adherent to surrounding tissues. The open method in addition gives opportunity to divide any ligaments, tendons, fasciæ and muscles which restrain reduction, to scrape out any material filling the socket, and to make provision for preventing recurrence of dislocation by retrenching the capsule or other plastic measures.

Skiagraphy may have a field in this department of surgery, as in fractures, by indicating the character of the luxation before the incision is made. It may perhaps be urged to this plea for a more general employment of exploratory incision in closed fractures and dislocations that there are great objections to making a closed lesion of the osseous system an open one.

I know of no objection except the risks inherent in anesthesia, the possibility of infection, the occurrence of serious bleeding, and the production of ankylosis. The objections are of no force when the injury is one requiring exploratory incision. Anesthesia will have been used in such instances for diagnosis or attempted reduction. Its moderate prolongation for the necessary time will add practically nothing to the risk. Bleeding is no contraindication except in that rare condition, hemorrhagic diathesis. Ankylosis is more liable to occur from displaced fragments or articular surfaces, irregular callus due to stripped up periosteum, and interference with articular contact, than from aseptic incision into the joint and readjustment of the joint structures. The possibility of infection is, then, the only factor that requires consideration. Fifteen or twenty years ago, even subcutaneous tenotomy at the heel, recommended by the surgeons of the Pennsylvania Hospital in cases of marked displacement after fractures of the tibia, was undertaken with some hesitation. Now operative infection in muscular and osseous lesions is so preventible and so readily managed by prompt action that it is no longer a valid objection to incision in a closed fracture or dislocation, if functional disability is liable to occur unless this operation is performed. For some years it has been the practice of surgeons to incise open fractures freely in order to thoroughly cleanse the deep recesses, obtain an antiseptic condition of the lesion, and get rid of effused blood. An extension of operative surgery is, in my opinion, now warranted in closed fractures and dislocations in which ordinary methods of reduction prove unavailing or unsatisfactory.

BIBLIOGRAPHY.

[1] "Trans. Am. Surgical Asso.," vol. iii (1885), pp. 6 and 105.
[2] "Trans. Am. Surgical Asso.," vol. x (1892), p. 58.
[3] MEDICAL NEWS, November 21, 1891, p. 590.
[4] "Trans. Clinical Society of London" (1894), p. 167.
[5] "Annals of Surgery," May, 1896.
[6] "System of Surgery," vol. i.
[7] "*Traité de Chirurgie*," Duplay & Reclus, ii, 376.
[8] "Annals of Surgery," April, 1895, p. 457, and "Philadelphia Polyclinic," August 21, 1896.

A FURTHER CONTRIBUTION TO THE STUDY OF THE FAMILY FORM OF SPASTIC PARAPLEGIA.

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IN the *American Journal of the Medical Sciences* for April, 1893, the present writer described two families, in each of which there were children afflicted with a spastic condition of the lower extremities. In one of these families the spastic rigidity was observed in three brothers, in unequal degrees, and it was also remarked that some of the other children exhibited more or less excesssive tendon-reactions. The note referring to one of these reads thus: "Maggie, aged six years. According to parents has, habitually, 'a lazy, dragging walk.' Knee-jerks much increased; slight ankle-clonus could be elicited, but with difficulty, as the child could not be induced to relax the muscles. Tendon-reflexes of upper extremities are present, but not excessive. Jaw-jerk quite active."

The child was still in this condition in June, 1893; there was nothing in her manner of walking or her attitude to attract attention. When seen again in March, 1894, she was found to be affected with pronounced spastic paraplegia. The mother related that the patient had been well until August, 1893; she then contracted bronchitis, and at the same time her gait became impaired, the present condition of the legs developing very rapidly. No reliable statement could be elicited as to the exact mode and rapidity of the onset. The bronchitis was followed by whooping-cough. Before this illness the patient had been a cheerful child, but since then had been depressed and taciturn.

An examination in March, 1894, showed her to be pale and dejected. She coughed and had a temperature of 100° F. at noon. There were bronchitic râles and enlarged cervical glands. She was unable to walk without assistance, but when supported she could walk with the typical spastic gait, shuffling along on her toes. The tendency to the equinus position was a little more marked in the right foot than in the left. As far as her limbs are concerned her condition then was, on the whole, the same as at the last examination, on the 20th of December, 1895. On this day it was observed that she had regained her general health. While seated she exhibited no spasm of the adductors or rigidity at the knees The big toe of each foot tended to hyperextension. She was able to stand for a minute or so without aid, holding the trunk inclined forward, the hips and knees flexed, the thighs adducted and the heels drawn up. She walked stiffly and laboriously, if held by the hand, scraping the floor with the tips of her shoes. The nutrition of the legs was normal. The knee-jerks were greatly exaggerated. The tendo-Achillis-jerk was in excess: a single tap on the tendon sufficed to produce several alternations of extension and flexion of the foot. By tapping the right tendo-Achillis a few times in rapid succession before flexing the foot, prolonged ankle-clonus was produced, which lasted as long as the flexion was maintained. On the left side only very brief clonus was elicited. The plantar reflex was very faint.

In the upper limbs the tendon-jerks were exaggerated; no clonus was obtained. The jaw-jerk was present. Sensation, the functions of the bladder, and the pupils were normal. There was neither strabismus nor nystagmus. In the right cornea there was a leucoma.

It will readily be conceded that the disease of this girl is the same as that with which her three brothers are affected. It is a spastic condition of the lower extremities, and it is the rigidity rather than any diminution of motor power that interferes with locomotion.

Erb[1] has published an account of two sisters, both of whom presented essentially the same clinical picture as these children, under the title of "Hereditary Spastic Spinal Paralysis." Strümpell[2] employs the same term for a spastic disorder observed by him in two different family groups, which, however, varies from that seen in Erb's and my cases in certain particulars. Indeed, within the last few years the multiple occurrence of spastic disease in families has been observed in a not inconsiderable number of instances[3], the classification of which is often rendered difficult by the variations they exhibit in respect to the age of onset, the progressive tendency, the range of symptoms, and other features.

Thus, while in some the spastic rigidity of the extremities is the sole manifestation of the disease, and might be referred to a morbid process in the lateral columns of the cord; in others, superadded muscular atrophy, inco-ordination or vesical debility would indicate a more extensive involvement of centers or strands in the spinal marrow, and in still others the associated symptoms would point to the brain as being primarily the defective organ. The anatomical data are by far too scanty to furnish a basis for classification.

The multiple occurrence of a disease in families is generally considered to be evidence of its endogenic nature. The resemblance of some of the cases of spastic rigidity occurring in families to "Little's disease" is, however, so great as to prompt inquiry into the conditions of the patient's birth and to sometimes suggest the dependence of their affection on the reiterated action of the etiological factors detected by Little in the abnormalities of labor rather than on a congenital tendency. In my former article I mentioned in this connection the cases of Schultze: Two brothers and their sister were each born at term, or after a somewhat longer period of gestation than usual; the births are said to have been slow and difficult, lasting three days in each case, but no artificial manipulations were resorted to —in fact, no medical aid was summoned. After delivery, it is stated, there was nothing to indicate that the infants had sustained any injury, and their development seemed normal until the age at which they should have walked, when the spastic rigidity of their lower limbs became obvious. An elder sister, the first-born child, was born without difficulty and remained well.

These cases are considered instances of "Little's disease," of cerebral birth-palsy, by Shultze and most authors who have occasion to comment on them. But it seems more plausible to me to classify them with the increasing number of very similar cases for which only a congenital tendency, peculiar to their family, will account. Wherein the "difficulty" of the births consisted, is not related; it is alleged that labor was prolonged, but we are allowed to infer that there was no asphyxia, there were no convulsions, no evidence that the duration of parturition had been disastrous to the children's brains. The easy birth of the first child would serve to indicate that there existed no structural abnormality in the mother sufficient to so impede labor as to cause a grave injury to the nervous system of three of the subsequent offspring.

B. Sachs[1] concurs with Schultze in regard to the etiology of the latter's cases, and therefore refuses them consideration in the chapter on "Hereditary Spastic Paralysis." He concedes to instrumental delivery some influence in the production of the disease, also, in the three brothers of my patient described in the foregoing, and while admitting "that there is a tendency to spastic paralysis in this family," yet he thinks "the fact that instruments were used at the birth of several children, including the one whose symptoms were most pronounced, makes it probable that 'heredity' alone was not responsible for the multiplicity of cases."

The assumption that the use of instruments may have been partially responsible for these cases is founded on nothing more than their external resemblance to a certain form of "Little's disease," and it is an unnecessary assumption, the tendency to spastic paraplegia being granted. At two of the births, moreover, no instruments were employed; and even if they had been the mere employment of them would not imply that disaster must follow on each occasion; nor would years have elapsed before the damage became evident.

The spastic condition of the children in the two families described by me conforms to what has been called "the spinal type of hereditary spastic paralysis." By the kindness of Dr. H. M. Sherman, orthopedic surgeon to the Children's Hospital, San Francisco, I am enabled to report the history of two sisters, in a third family, who, besides an incipient spastic affection of the lower limbs, exhibit defective development of the power of speech. I have had only one opportunity of observing these cases, and plead this as an excuse for the incompleteness of the account of them.

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[1] *Deutsche Zeitschrift für Nervenheilkunde*, Bd. VI.

[2] *Deutsche Zeitschrift für Nervenheilkunde*, Bd. IV.

[3] Higier recently collated the literature of the subject and added new observations in the *Deutsche Zeitschrift für Nervenheilkunde*, Bd. ix., H. 1. Since the publication of his article, Raymond and Souques (*Semaine Médicale*, August 8, 1896) have reported the cases of two sisters with progressive spastic paraplegia. The disease began in the elder, at the age of nine years, in one of the lower extremities, and then progressed until it involved both legs in a high degree, and also, in a less degree, the upper limbs and the trunk; in the younger girl, who had been affected since the age of twelve years, the lower limbs only were involved. The birth of each had been normal.

[1] "Nervous Diseases of Children," page 393.

No nervous disorders are known to have occurred in previous generations of this family. The father is said to be temperate in the use of alcohol, but to smoke cigarettes to excess. He is employed, like the father of the other children with which this paper deals, in the gas-works. He is reported to be normal, except that he has a "cast in the eye." The mother enjoys good health. She has had no miscarriages. The parents are not related by blood.

There have been five children. The eldest, Edith A., twelve years old, is well. She began to walk at the usual age. At her birth the forceps was used, merely to curtail labor, it seems. The second and third child died at four and two years respectively, both in the same week, of diphtheria. They had talked and walked well.

The fourth child, Emma A., is six years old. She was born at term; labor was easy, but was terminated by forceps by the same attendant as at the first birth. The infant was not asphyxiated, and had no convulsions. She thrived, and made her first attempt to speak at one year, but her articulation has remained very indistinct. The grandfather declares that he understands her with great difficulty. When two years old, the patient had scarlet fever, and the mother thinks that after that the faculty of speech was still more impaired. Two months before the visit, a stiffness of the legs and a tendency to raise the heels were first noticed.

Condition August 24, 1896.—In the room the patient stands, walks, and runs about actively, but close inspection reveals a decided inclination to pes equinus on the left side; the shortening of the tendo-Achillis is undoubted. There is slight rigidity at the knees. No ankle-clonus. Achillis-reflex present; also plantar-reflex. The knee-jerks are greatly exaggerated. Tapping on the anterior tibial region causes the whole leg to jerk. The big toes are now and then over-extended. Active jerks are easily elicited in the upper limbs—more active than normal. A plain jaw-jerk may be provoked.

The fifth child is Margaret A., four years and three months old. Born at term; no instruments employed. There was another attendant at this confinement. No asphyxia, no convulsions. Has had no illness except the present trouble. Began to say "mamma" and "papa" at one year, but her articulation remained very indistinct, and it is only of late that her mother has been able to understand her. Walked at fourteen months. Six months ago the tendency to walk on her toes became manifest, and it has been more pronounced since last May. Frequently catches her toes and trips, sustaining bruises. Wears her shoes out at the tips.

Condition August 24, 1896.—Very slight strabismus. The spastic condition of the lower extremities, although more pronounced than in her sister, is not sufficient to prevent active locomotion. Raises the heels when walking. There is incipient shortening of the tendo-Achillis. No foot-clonus. Great exaggeration of knee-jerks, which are easily provoked by tapping anterior tibial or femoral region. The plantar reflex is present. There is a tendency to over-extension of the big toes. Active jerks produced in upper limbs. A slight jaw-jerk is obtainable.

Both children use their upper extremities freely. At the examination they were noisy and unruly, but it was ascertained that they presented no disturbance of sensation. Their general nutrition and that of their legs, particularly, is good. It was difficult to form an accurate opinion as to the extent of the defect in their speech; an occasional expression indicated that they have some power of speech and that they are not idiotic. Indeed, they are considered intelligent by their mother and maternal grandfather. They have control of bladder and rectum, and are cleanly in their habits.

The association of defective speech with the spastic rigidity of the limbs ranks these cases with those of a cerebral or cerebro-spinal type. For the present, one must be content to merely record the cases and await the results of anatomical investigations before attempting further interpretation of the symptoms.

SYMPHYSEOTOMY FOR THE RELATIVE INDICATION.

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WHILE there may be room for discussion regarding the positive indications for symphyseotomy in some cases, this operation is clearly required in cases where disproportion between the fetus and the pelvis exists, the pelvis itself being but little, if any, smaller than the average. The results of the operation in these cases are best, especially in multiparæ, in whom the genital canal has been previously dilated by childbirth, but in whom the progressive increase in the size of the fetus, seen in repeated pregnancies, is also a complicating factor. The prognosis in such a case depends very largely upon the presence or absence of infection, and whether or not the patient has been already subjected to fruitless efforts at delivery before the operation is undertaken. These statements find illustration in the following case:

The patient, Mrs. M. K., was brought by ambulance to the Jefferson Maternity on January 21, 1896, with the following history: She had been delivered, some years previously, of a living child, by forceps, after a tedious extraction. Her general appearance was that of good health, and she was fully of average size and development. The present pregnancy was her second, and she had come into labor at full term, the child being evidently large and well developed. Spontaneous labor failing, the physician in attendance had summoned assistance, and forceps had been applied unsuccessfully. The presentation and position had seemed favorable for forceps delivery, but her physician had desisted, and had sent the patient to the Maternity. On admission, her general condition was fairly good. Palpation revealed the fact that the head had but partially engaged. The child was living, and occupying the second position. The mechanism of labor had paused at the stage of partial engagement. The heart-sounds were very rapid. Pelvimetry revealed the size of the pelvis as follows:

Anterior superior spines . .	24 cms.
Crests	25 "
Trochanters	30½ "
External conjugate . . .	19¾ "

The child was evidently larger than the average, the complication being disproportion between the mother and child, with but a slight contraction of the pelvis.

The husband and mother of the patient followed her to the Maternity, and it was stated to them that in the interests of the mother and child, symphyseotomy was clearly indicated. A guarded prognosis was given because of the previous attempt to deliver with forceps, and the danger of infection which it entailed. The patient had been in her own dwelling, and without the services of trained nurses. The operation itself was performed without difficulty; the symphysis was readily opened by an incision through the abdominal wall, terminating a half-inch above the joint, the joint itself being opened by a probe-pointed bistoury passed along the fingers which protected the urethra. After symphyseotomy, it was found that the occiput had rotated posteriorly, and the child was readily delivered in this position with Tarnier's forceps. It was noticed that a very perceptible odor was present when the child emerged.

The child was a male, weighing 8 pounds; 50½ cms. long. The measurements of its head were as follows: Maximum, 15½ cms.; occipito-mental, 14 cms.; occipito-frontal, 13 cms.; suboccipito-bregmatic, 12 cms.; biparietal, 10½ cms.; bitemporal, 9½ cms.; bisacromial, 13½ cms. The placenta weighed 1⅛ pounds; the length of the cord was 23 inches. The child's respirations were exceedingly rapid, varying from 40 to 60, and it was evident that inspiration-pneumonia had begun. The child survived delivery eighteen hours, perishing from pneumonia.

On examining the mother it was found that slight lacerations of the anterior and posterior vaginal wall had occurred, requiring suture; these were closed with chromicized catgut, the uterus freely douched with an antiseptic solution and tamponed with iodoform gauze. The symphysis was drained for twenty-four hours by a packing of iodoform gauze, while the bladder was continuously drained by permanent catheter for several days. The patient rallied well from the operation, but gradually developed a sapremic condition. This necessitated a thorough cleansing of the uterus with the douche-curette, after which her symptoms decidedly improved. Union occurred through the greater portion of the symphyseotomy-wound by first intention. Immediately above the pubes suppuration in the cellular tissue occurred, and a slight discharge of thin pus persisted for several days. This was readily drained by a light packing of gauze. Union occurred, without interruption, in the joint, the patient ultimately making a perfect recovery. She was kept at the Maternity seven weeks after admission, in order that her convalescence might be completely assured. She was then in excellent condition, able to walk on a level, and up and down stairs without discomfort. Her pelvis had united firmly, and the genital tract was in normal condition. Ten weeks after the operation her pelvis was measured, with the following results:

Anterior superior spines . .	24½ cms.
Crests	25½ "
Trochanters	31 "
External conjugate . . .	19¾ "

Comparison with the measurements made on admission shows a gain of ½ cm. in several diameters of the pelvis. This patient has been twice seen since her discharge, the last time during the month of October, 1896. She is in perfect health, and has not experienced the slightest inconvenience from the pelvis or pelvic organs.

The method of treatment employed for immobilizing the pelvis is that which I have found sufficient in seven symphyseotomies. So soon as delivery is effected, and the genital canal made aseptic, and sutured, if necessary, the pelvis is brought together by firm pressure, and a strip of the best rubber adhesive plaster, from six to eight inches wide, is passed firmly around the pelvis, the center of the strip being over the trochanters. The usual occlusive dressing is placed over the vulva and over the symphyseotomy-wound. The patient's knees are bandaged together until she fully regains consciousness after the anesthetic. When it is necessary to clean the patient, she is carefully lifted by two assistants who grasp the pelvis firmly from each side. When the strip becomes soiled, it is removed, the skin carefully washed with soap and water, then with alcohol, and dusted with powdered oxid of zinc, or boracic acid. A fresh strip is then applied. Should it be desired to avoid disturbing the patient, a second strip can be applied over the first, should the first become stretched or moistened. A firm roll is placed beneath the patient's knees, her posture being most comfortable when the knees are partly flexed. The plaster dressing is worn for three or four weeks, when it is replaced by a canvas belt with buckles. Care is taken to cut out the plaster strip over the uterus, that it may not interfere with involution. In seven cases, good nursing and strict cleanliness have prevented the formation of bedsores. If the skin be bathed frequently, and alcohol be used in addition, patients should experience no trouble from the pressure of the bed or the constrained posture. This was the only case in which I have met with suppuration after symphyseotomy. The question occurred, so soon as pus was discovered in the joint, whether drainage would not be necessary by puncturing the anterior vaginal wall. It was observed that no active inflammation seemed present, and that the source of the discharge seemed to be the fatty and connective tissue immediately behind the joint. The gauze drain proved perfectly efficient, and the use of irrigation was not found necessary. So far as the ultimate result was concerned, the discharge from the joint seems to have had no bearing upon a perfect union.

In reviewing the case, the difficulties under which the physicians originally in charge labored must be kept in mind. In the ordinary dwelling, the circumstances are not favorable to a strictly aseptic operation, and especially in the absence of suitable nurses. While the physician himself may be thoroughly clean, it is almost impossible, without good nursing, to prevent infection in many cases. The interesting question arises, Was symphyseotomy justified, or should craniotomy have been performed? Here again, the experience of the writer is decidedly in favor of symphyseotomy, as this is the only case in seven in which the child did not survive. The careful examination of the child's head showed that injury to the cranium was not present. Inspiration-pneumonia was so clearly present that no reasonable doubt exists as to the cause of death. Had craniotomy been performed, the delivery would have been no less difficult, and the mother's genital tract would have been subjected to even more bruising than was present in the case. It was observed that as a result of the attempt to deliver with forceps the pelvic floor and vagina were considerably swollen when the patient was admitted. The heart-beat of the child on admission was sufficiently good to warrant an effort to save its life, and hence craniotomy was declined in favor of a conservative operation.

A Hospital for Children. — Baroness Hirsch is contemplating the desirability of giving 2,000,000 francs for the erection of a hospital on the Riviera for consumptive children.

CLINICAL MEMORANDA.

A CASE OF PERFORATING GASTRIC ULCER; OPERATION; RECOVERY.

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In recent years considerable attention has been devoted to the surgical treatment of gastric ulcers, not alone in cases of perforation, but also when persistent pain and hemorrhage have baffled medical treatment. In the latter class of cases the possibility of failure to find the ulcer must always be considered before gastrotomy is recommended. In the former class, however, no question can arise as to the propriety of surgical interference. Gastric ulcer is a common disease, and perforation takes place in at least ten per cent. of the cases (Comte says in fourteen per cent.). Without surgical treatment more than ninety-five per cent. of these patients must die. In an admirable article[1] Drs. R. F. Weir and E. M. Foote have tabulated seventy-eight cases treated by operation (where perforation into the general peritoneal cavity had occurred), with a mortality of seventy-one per cent. This mortality, however, would undoubtedly be much reduced could the patients fall into the hands of the surgeon soon after the perforation. Take for example the twenty-three cases where operation was done within twelve hours (Weir and Foote's tables), and there were fourteen recoveries, a mortality of thirty-nine per cent.

The results of operative interfence in cases where a localized intraperitoneal abscess has formed without rupture into the general cavity must be still more favorable. In such patients an early diagnosis and an early operation are of the utmost importance. It is true that often the diagnosis is obscure, but even in doubtful cases the symptoms are generally such as to warrant an exploratory operation. The walls of such abscesses vary greatly in strength, and no one can predict how soon rupture will take place. In the case the report of which follows, the abscess had evidently existed for at least four weeks, and in spite of cathartics, gastric lavage, and vomiting, its walls had not yielded. At the operation this was explained by the large amount of inflammatory exudate surrounding the abscess cavity.

E. R., aged thirty-five; widow; never pregnant; absence of rheumatic, syphilitic, malarial, and alcoholic history. Has never suffered from typhoid, dysentery, or any of the contagious diseases. When twenty-one years of age she weighed 170 pounds. For years habitual constipation necessitated the use of cathartics every second or third day. During the past three or four years occasional attacks of severe constipation, when sometimes for weeks there would be no movement of the bowels. For the past eighteen months she has suffered from disturbances of digestion, occasional nausea and vomiting, with frequent severe colicky pains, and some abdominal distention. Considerable and progressive loss of flesh and strength. In September weighed 114 pounds. On October 24, 1895, attack of vomiting and nausea, continuing for two or three days, with abdominal pain, especially in the epigastric region. In spite of cathartics, persistence of obstinate constipation, so that until November 6th only one small movement of the bowels could be obtained. Abdominal distress increased and but little nourishment could be taken. On November 4th the epigastric pain had become so severe that Dr. R. Milbank was called in consultation by her physician. At that time the abdomen was considerably distended, the muscles rigid, and there was general tenderness, but more marked in the epigastric region. Dr. Milbank made the diagnosis of either perforating gastric ulcer, or partial intestinal obstruction due to a band, and advised laparotomy. He asked me to see the case on November 5th, and we agreed that the probable diagnosis was an ulcer of the stomach, which had either partially perforated, with a resultive local peritonitis, or had entirely perforated, with a resulting encapsulated abscess. Her temperature then was 101° F.; pulse, 100; respiration, 26. She complained of severe pain in the epigastric region, with exquisite tenderness, the most tender point being a little below and an inch to the left of the ensiform cartilage, and in this region an indistinct mass could be felt, though on account of the tenderness it was impossible to determine its nature or extent. Consent was not given to an operation. Between November 6th and 24th the patient was seen by a number of physicians, who were in doubt as to the nature of the trouble, and advised against immediate operative interference. During this time the epigastric pain continued, the abdomen remained moderately hard and tympanitic, nausea and vomiting persisted, but little nourishment could be taken, and there was a steady loss of flesh and strength. The bowels were moved by high oil enemata and gastric lavage was employed. There was continued fever; the morning temperature was 99½ to 100° F., the evening 101 to 102° F., occasionally rising as high as 104° F.; pulse, 110 to 130. She was afterward admitted to the medical division of the hospital, when the necessity of operation was urged by Dr. F. C. Kinnicut. On November 25th the patient was admitted to the surgical division. Abdomen hard and moderately tympanitic. Epigastric region very sensitive to pressure. Projecting from under the free border of the left costal cartilages, toward the ensiform cartilage, could be felt a resistance, and an indistinct mass which seemed immovable and apparently attached to the stomach. Temperature, 102½° F.; pulse, 110. In spite of adverse opinions the case was diagnosed as one of perforating ulcer of the stomach with an encapsulated intraperitoneal abscess. The history, the acute epigastric pain and tenderness, with the indistinct mass in this region, seemed to point to this conclusion. Another important sign was, that the pulsation of the aorta seemed to be transmitted directly to the finger, when gently placed on the surface of the abdomen just below the tip of the sternum. The impression was given that a solid body had taken the place of the hollow viscera, that it rested on the aorta, and was adherent to the abdominal wall. This peculiar pulsation is often a sign of great value when it is a question in diagnosis between cancer and tumors of an inflammatory origin.

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[1] MEDICAL NEWS, May 2, 1896.

Operation. — November 26th; chloroform. Vertical median incision, 3½ inches downward from the tip of ensiform cartilage. When the peritoneum was reached, it was found firmly adherent to structures beneath. In the upper three-fourths of the incision was found the adherent left lobe of the liver, which was markedly congested. In the lower fourth was found the stomach adherent to the abdominal wall and to the liver above. This agglutination of stomach and liver formed the superior wall of the abscess. The liver was separated and pushed upward and the stomach pushed downward. Between these organs there was a considerable mass of inflammatory exudate. Through this material the finger was gently pushed, and at the depth of two inches a cavity was entered which contained about two ounces of frothy, purulent fluid, particles of coagulated milk, and remains of food. At the bottom of this cavity, at a point 3½ inches below the skin, was felt an opening into the wall of the stomach, which admitted the tip of the index finger. The opening was oval in shape, with indurated and comparatively smooth edges. For a considerable distance around this opening the wall of the stomach was thickened, and very markedly so, for a space the size of a silver dollar; its thickness at the edges of the opening being at least one-third of an inch. This opening was situated in the lesser curvature, just anterior to the attachment of the anterior layer of the lesser omentum, and at a point about one-fourth of the distance from the cardiac to the pyloric orifices.

The abscess cavity was carefully cleansed, the edges of the opening in the stomach were thoroughly scraped with a scalpel and trimmed with the scissors. The opening was then closed by two rows of sutures. The first row consisted of uninterrupted catgut sutures passed through the serous and muscular coats, both of which were much infiltrated with inflammatory tissue. The second row consisted of interrupted silk sutures inserted through the serous coat. The tissue was so friable that several of the sutures of each row tore out, and consequently it was necessary to introduce the needle at a considerable distance from the edge of the opening. After careful cleansing, a strip of sterilized gauze was passed down to the line of suture and the end brought out through the abdominal wound, the remainder of which was closed by three rows of sutures. Moderate shock followed.

November 27th: Patient complained of nausea, and there was slight vomiting. Temperature, 100½° F.; pulse, 110.

December 1st: External dressing changed; no sign of leakage. Temperature, 99½° F.; pulse, 110.

December 3d: Gauze strip removed; no leakage. Temperature has not reached 100° F.

December 7th: Attack of pleurisy, with effusion on *right side*, continuing with considerable severity for ten days.

December 20th: Sutures removed; gradual gain of strength; nausea disappearing and appetite returning; bowels move freely.

December 25th: Out of bed; fair appetite; progress very slow.

January 10th: Considerable gain of strength; discharged.

October, 1896: Since discharge, there has been slow but progressive gain in flesh and strength. For the first six months, appetite was very poor and digestion weak. For past three months, however, gain has been more rapid. Increase in weight since discharge from hospital, twenty pounds. General condition fair; no nausea or vomiting, but caution needed in the selection of her diet. No pain, and patient feels that she is slowly, but steadily, improving.

January 1, 1897: Gain of ten pounds in weight since last report. Health excellent.

SUBPERIOSTEAL SQUAMOMASTOID ABSCESS.

By O. A. LACRONE, M.D.,
OF KALAMAZOO, MICH.

SUBPERIOSTEAL squamomastoid abscess generally occurs as the result of infection of the mastoid antrum and cells, the pus passing between the plate of the squamous portion of the temporal bone which covers the antrum, and the mastoid. The periosteum being more easily separated over the squamous portion than over the mastoid, the swelling occurs above the ear. It is generally an acute process and presents a formidable aspect, as the three cases recently coming under my observation will illustrate.

CASE I.—P., aged fifty-four, consulted me for a swelling above the ear of such size that it pushed the upper part of the ear down and out, until it formed an angle of about forty degress with the head. He stated that two weeks before he had had slight pain in the ear, which had soon subsided, but the noises in the ear had caused him considerable uneasiness, and for one or two days he had been suffering intense pain above the ear and in the eye of the affected side.

I could not discover pus or inflammatory action in the middle ear, and the drum was not even congested. I directed hot applications, leeches, and an anodyne for the night, and in the morning found him resting comfortably. He had no pain, the temperature was normal, and there was but slight tenderness on pressure. I ordered the hot applications continued, but in a few hours was summoned and found the patient suffering intensely and considerably alarmed. I made a free incision down to the bone at the lower and posterior angle of the swelling, at the junction of the squamous and mastoid portions, but could detect no pus. The depletion caused by the free hemorrhage gave him relief, and he rested well until two days later, when the swelling rapidly extended over the mastoid. A second incision was made, a small quantity of pus escaped, and the bone was found to be eroded over part of the squamous and mastoid portion. The wound was cleansed and packed with gauze, and he made an uninterrupted recovery in a few days. The hearing, which had been only slightly impaired, soon returned to normal, and there has been no inconvenience experienced since. There was no history of injury in this case.

CASE II.—Through the kindness of Dr. Rush McNair, I saw J., aged nine, a robust boy, who had suppurative otitis media following scarlet fever. The ear had been discharging freely for some three weeks, when suddenly the temperature rose to 103° F.; pain became very severe in the side of the head and face, and an immense swelling appeared above the ear, extending forward over the zygoma. An incision had been made over the ear through the periosteum, but no pus was found. Chills, vomiting, and an increase of the swelling over the mastoid rapidly supervened. The sanitary conditions of the place were such that we decided to remove the child to the hospital, where, on the following day, we made a free incision over the mastoid and another over the anterior part of the squamous. We found the entire temporal bone, except the tip of the mastoid process, denuded of periosteum. There was free communication through the antrum to the tympanum. A large quantity of dark-colored pus escaped. The wound was thoroughly irrigated with bichlorid solution, and a strip of gauze was passed through both openings. The discharge from the ear soon ceased, the temperature dropped to normal, the appetite returned, and the pain completely subsided.

CASE III.—A well-developed and healthy child, aged nine months, had suffered from pain in the left ear for a short time, which soon subsided, and as there was no discharge from the ear, no further notice was taken of it until two weeks afterward, when a swelling suddenly appeared above and behind the ear. The temperature was 101° F., and pulse 110; the appetite was good, but the child was unable to sleep well, and would not lie on the affected side. I made an incision over the mastoid down to the bone, and a considerable quantity of dark, thick pus escaped. The mastoid and part of the squamous portion of the bone were denuded of periosteum, and the bone eroded and greenish. The abscess was thoroughly washed out and a drainage-tube inserted. After two days the child was removed to its home in Otsego. Three days later the tube had dropped out; there had been no pus since the second day. I washed the wound again thoroughly, and as no pus escaped, I did not again insert the tube. The child made a good recovery, and has since had no trouble.

It will be noticed that in two of the three cases the drum had not been ruptured, and the pain had been so slight that no suspicion of middle-ear trouble was entertained. It is not so strange that this should occur in a child where the plates of bone are connected by a fibrous matrix, and the pus finds easy egress, but it is peculiar to find it in the case of a man fifty-four years of age, even though extensive and destructive inflammation of the middle ear may occur without rupture of the tympanic membrane.

These abscesses are not common, nor are they as dangerous as those affecting the antrum and cells. The acuteness of the attack and the severity of the symptoms demand immediate attention. Mastoid abscess, on the one hand, may be easily overlooked unless the inflammation be severe enough to destroy the mucous lining of the cells and attack the bone beneath. Both varieties present easy roads for the entrance of pathogenic organisms to the brain—the squamomastoid variety through numerous veins which connect directly with the lateral sinus through the mastoid foramen, and the mastoid variety through thrombosis of the veins in the mucous membrane, when the inflammation is severe enough to produce that result, and by erosion and necrosis through the tegmen, antrum, and sigmoid groove.

MEDICAL PROGRESS.

Differential Diagnosis of Abscess of the Brain,—In the *Fortschrit d. Medecin*, November 15, 1896, OPPENHEIM emphasizes the difficulty of differential diagnosis in traumatic brain abscesses, which may be confounded with traumatic meningitis, apoplexy, encephalitis, tumor, epilepsy, traumatic neuroses, etc. Cases cited prove how easily a one-sided traumatic apoplexy, or a hemorrhagic non-purulent encephalitis may, from symptoms alone, be taken for abscess. Oppenheim mentions a striking case in a boy, in which a wound on the forehead was followed by slow pulse, optic neuritis, rigidity of the neck, etc. A diagnosis of frontal abscess was made, but puncture gave no pus. On the following day the pulse was 144, there was fever and unconsciousness, and rapid death. The autopsy showed a well-developed tubercular meningitis. The boy was ill before the accident. The traumatism merely gave an impulse to the development of the disease.

Suppurative meningitis occurring with an abscess is likely to be overlooked. An abscess of the brain is marked by normal or subnormal temperatures; fever is by no means a necessary symptom. If an attack begins with a rise of temperature, it is probably not due to an abscess of the brain—certainly not to an uncomplicated one. A slow pulse is, perhaps, the most reliable single symptom.

It is also well to remember that patients suffering from ear troubles often become hysterical, and that a hasty diagnosis of hysteria, even if the typical symptoms are present, may falsely be made in cerebral abscess of otitic origin.

Pregnancy and Labor After Operative Antefixation of the Uterus.—The frequency with which backward displacements of the uterus occur, and the increasing use of surgical measures to relieve them, give an especial interest to the report of pregnancies occurring after the various operations for antefixation, GRUSDEW has reported in the *Münchner med. woch.*, November 17, 1896, the results in 123 operations of this character. In fifty of the cases a ventral, or vesical, or ventro-vesical fixation was performed; in forty-one, Alexander's operation, and in thirty-two, vaginal fixation. These figures represent only those cases which were kept sight of for some time after operation.

In no case of abdominal fixation did relapse occur. Four of these patients became pregnant, one of them after sixteen years of sterile matrimony. There was no unusual symptom during the pregnancy, except in one instance. In one case, at operation, the uterus was found to be adherent to the inflamed right tube, which was removed. The uterus was then fastened right and left with silkworm-gut to the recti muscles, and with catgut to the vesical peritoneum. Beginning with the second month of pregnancy, there was occasional pain in the right side and straining at micturition. At the end of the fifth month examination by catheter showed the bladder to be situated in the pelvis, underneath the uterus, and extending well to both sides. The urine was perfectly clear. Two of these four cases had normal labors. In the other two, pregnancy was not completed at the time of report.

Alexander's operation was performed upon forty-one women, of whom the subsequent history could be ascertained. It is worth noting that the ligaments were shortened a good deal, in most cases from three to five inches. There was a recurrence of the posterior displacement in three cases, in one of them only after labor. Pregnancy occurred in twenty-three of the patients operated upon, resulting in five miscarriages and eighteen deliveries at term. One of these was with forceps. Several of the patients complained during pregnancy of more or less pain in the operative scars.

Four of the patients treated by vaginal fixation became pregnant. Three of those upon whom Mackenrodt's operation was performed finished the pregnancy normally. In the fourth case the operation recommended by Dührssen, with opening of the peritoneum, had been done. In the second month displacement recurred, and was followed by abortion.

In the light of his experience, Grusdew is inclined to reserve the abdominal fixation for those cases in which there are firm adhesions, or in which disease of the adnexa is suspected, preferring for all uncomplicated cases Alexander's operation. The vaginal operations are less advisable, in his opinion, because the strong attachment of the uterus to the vaginal wall is apt to disturb pregnancy, and if that goes on to term, relapse is not uncommon. Of course, these objections are most potent in young married women.

Antiseptic Properties of Saliva.—HUGENSCHMIDT (*Ann. de l'Inst. Pasteur*, October, 1896) has made an attempt to determine why operations upon the mouth are so seldom followed by infection. He was not able to prove that the saliva possesses any germicidal power. The commoner bacteria grow rapidly in it. Nevertheless, it has a two-fold mechanical action to keep down infection. It dilutes and washes away alimentary material, and by its alkalinity it prevents fermentation.

But Hugenschmidt thinks the saliva possesses the power of stimulating diapedesis in the numerous lymphatic organs situated in the mouth. Even in its normal state the saliva contains products of the secretion of microbes, and therefore possesses an attraction for microbes, and thus favors the phagocytic action.

This hypothesis the writer upholds by several experiments. One of them was the introduction of small glass tubes into the abdomen of the guinea-pig. These tubes were closed at one end and filled with saliva. In eight hours it was found that the leucocytes had crowded into the open end of the tube, forming a plug about two mm. in thickness.

In a second experiment, a small portion of the mucous membrane of the lower jaw of the guinea-pig was resected and its base mangled with a curette. In twenty-four hours the wound was covered with a layer of leucocytes, in the interior of which were found bacteria of various sorts, apparently of the same sorts as those in the saliva. From these, and other experiments. Hugenschmidt concludes that the saliva has no germicidal power, and that the freedom from infection of wounds in the mouth is due to active phagocytosis, brought about by the power of the saliva to stimulate the diapedesis of leucocytes.

Relation of the Sexual Organs to the Skeleton.—HENRY MEIGE in the *Journal des Connaissances Médicales*, 1896, speaks of their regularities in the development of the skeleton often observed among those whose genital organs are atrophied, either from accident or from some congenital cause. One naturally asks the question whether atrophy of the sexual organs does not influence to some degree the development of the bony tissue. It is known that under the influence of some irritating cause the bones undergo malformations, either an enlargement or an atrophy. No one has been able to give a satisfactory explanation of these two contrary conditions. In studying more carefully this question, anomalies of the skeleton are found to occur more often in the case of individuals suffering from atrophy of the genital organs.

In the case of infantilism and effeminacy a congenital atrophy of the sexual organs is nearly always accompanied by some characteristic change in the skeleton. In a general manner, it may be said that in such cases the skeleton holds a place half way between that of man and woman. But on the other hand, under these same conditions one sees sometimes giants, then again dwarfs. The latter, however, seem to predominate, although it cannot be said that an atrophy of the sexual organs is the true cause of this lack of development of the bones, for in these cases there is nearly always an imperfect development of some part of several different organs. In nearly all the cases of an over-development of the bony tissue there is observed a marked atrophy of the sexual organs; this is also noticed in the case of those who have accidentally been castrated; eunuchs, also, often have very large frames. In other cases, anomalies are noticed only in certain bones, or parts of bones. So individuals of an infantile or effeminate type often suffer from *genu valgum*, or from different exostoses, and are especially subject to inflammations of the bony tissue. It is well known that at the age of puberty there is a rapid growth of the skeleton; sometimes this is uniform, sometimes only partial. Over-development of the bony tissue is also noticed in animals that have been castrated, and it is generally the hind legs and buttocks that are increased in size. For example, capons have very long feet; the hoofs and the hindquarters of the ox are more developed than those of the bull. From such facts as these Meige concludes that there must exist some relation between the development of the sexual organs and that of the skeleton.

Treatment of Club Foot.—BILHAUT (*Journal de Médecine de Paris*), in an article on paralytic club foot, calls attention to the fact that deformity of the foot almost always follows paralysis of a lower extremity in a child. This is the case whether the paralysis is due to a myelitis anterior or is spastic in character. For this reason the foot should immediately be secured and supported in a proper position for locomotion.

In neglected cases where the deformity has existed for some time, contractions of the muscles, tendons, and ligaments will have taken place, and the position can be corrected only by operation. In some cases there are marked bony changes also, and operation upon the soft parts is not sufficient, cuneiform osteotomy or removal of the astragalus being necessary to bring the foot into a proper position.

A Simple Method of Abdominal Massage.—STEINHARDT (*Allg. Med. Centr. Ztg.*, No. 70, 1896). A hollow sphere 4 inches in diameter is made of two pieces of hard wood fitted together with a screw. The cavity is partially (not more than $\frac{5}{6}$) filled with buckshot. Immediately before rising in the morning the patient, still fasting, rolls this ball over the abdomen for about fifteen minutes, at first in various directions, and then along the course of the large intestine, from cecum to sigmoid flexure. The falling of the shot within the ball gives a slight vibratory motion which may be increased by lifting the ball until it almost leaves the skin and then dropping it. The treatment is said to cure chronic constipation.

The Outcome of Placenta Previa Cases in Koblenz.—In the *Centralbl. f. Gyn.*, No. 36, 1896, FUTH tabulates the statistics he obtained from midwives in Koblenz with reference to cases of placenta previa occurring in their practice. The material involved 50 mothers and 53 children. A physician was present in 44 of these cases. Of the 50 mothers, 19 (38 per cent.) died, 2 before delivery, 2 during delivery and 15 after delivery. Of these last, 4 died from loss of blood, 6 from septic infection, 4 from the effects of previous hemorrhage, and one from an unknown cause.

Of the 53 children, 32 were born dead and 10 others died in the first 9 days. Only 11 (20.8 per cent.) outlived a month.

In 12 cases (2 of them fatal) the first hemorrhage appeared just before labor pains. In 38 cases between the first hemorrhage and labor there was an interval of days, weeks, or even of months, during which time the physician, or sometimes the midwife, tamponed the vagina.

Füth believes that many of the mothers might have been saved if the physicians had followed the two cardinal principles which ought to govern these cases:

1. As soon as a diagnosis of placenta previa is made labor ought to be induced.

2. Only that form of treatment is advisable which stops the hemorrhage and rapidly dilates the cervix, so that the doctor may be by the bedside until the child is delivered. This is especially necessary in the country, where it may take hours to get a physician.

These ends are best accomplished by an intra-uterine colpeurynter with continued traction upon its tube, followed—as soon as dilatation permits—by podalic version.

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IS THE COUNTRY DOCTOR A DISTINCT SPECIES?

A NEW poem, uniting praise and pity for the country doctor, has begun to go the rounds of the medical press. Like the old ones, it is quite pathetic and quite good poetry, but is there a true foundation for the sentiment on which these country-doctor poems, orations, and stories are based? And, if not, is there an adequate excuse for writing even good poetry and good prose which will tend to foster false ideas?

We are all familiar with the poetry-country-doctor. He has hayseed in his hair and mud on his boots, his hands are large and calloused, while his heart is big and tender; he rides incredible distances, usually at night, and a very stormy night at that; he is very badly paid—and usually in apples, potatoes, and hay. He is uncouth, and we are informed very distinctly that his advantages have been decidedly lacking, yet his conscientious devotion to his calling and his insight into human nature are such that he accomplishes therapeutic miracles. But, unfortunately, just enough complicated cases are recognized by the poet to bring in a soft-handed and hard-hearted city consultant, who steals the glory and appropriates the possible financial recompense of the unsophisticated country hero. All this sort of poetry creates a sentiment against the city physician and begets a maudlin sympathy for the country doctor—the kind of sympathy that leads to letter-writing, and that would like to express itself in the sending of a barrel of old clothes, but which does not conduce to professional respect nor to professional employment; for it is a characteristic of human nature not to give employment to any one who really needs it, unless that employment is such as sawing wood, or cleaning out a cellar, or sweeping a walk.

Now, speaking as one so bred in city life that existence in the country would be as uncomfortable as the life of a fish out of water, we wish to protest against the sentiment that the country doctor is an essentially different being from the city doctor, and most emphatically that he is any more of a hero and any less of a gentleman than the latter. A man of common sense dresses somewhat differently for a ten-mile drive against a sweeping wind than for a mile-ride through streets whose buildings prevent any prolonged exposure to the wind; he also conforms to the customs and financial habits of the community in which he lives. But, with these provisos, a considerable acquaintance—and an acquaintance on a personal, friendly basis—with country practitioners, has failed to justify the type as depicted in the class of literature referred to.

A study of the graduating class of the average medical school will, we believe, show that the men who are planning for a country practice are just about the same kind of men as those who are expecting to engage in city work. We must also grant that, strictly speaking, there are very few *country* doctors, for the doctor must locate in some business and social center, however small; so that he can scarcely be considered a resident of the country, while he enjoys the privileges of social intercourse with his fellow villagers. The man who seeks a new country, be he physician, lawyer, farmer, or business man, expects to put up with the inconveniences of pioneer life, and can scarcely ask for sympathy on that account. The physician who chooses to locate in a small town in any of the thickly-settled States, has usually ready access by rail to the larger cities, where the advantages of museums, theaters, and other places of amusement, libraries, and large stores may be had without great expense or inconvenience.

While the fees of the country practitioner seem low to his city colleague, his expenses are even proportionally lower. We have been informed that the expense of keeping a horse in the country, or in a small village, is about 10 cents a day—not much more than a tenth of the expense in a large city; the disproportion in rent is approximately as 1:5 or 1:10; household supplies are obtained at slight cost, and many drains on the purse of the city doctor are entirely lacking.

The village doctor, moreover, deals with a comparatively fixed population, most of his clients being responsible property-owners, while the city physician is plagued with a relatively large pauper class and with another class who live better than the average resident of the country or village, but who are absolutely irresponsible for debts. There is no doubt whatever, that the financial trials of the first few years of city practice are practically wanting in the experiences of the country practitioner, and the latter, though perhaps not in the position to look forward to the possibilities of a large income, is much better able to lay up property and to occupy a relatively high position in the society in which he lives. It ought to be rather a matter of individual taste than of economic judgment whether one is to live in a city or in a small village.

Comparisons are always liable to involve odium, and they are especially to be deprecated when they tend to make two classes of what ought to be one body. The man who succeeds in making the Nebraskan believe that he is different from the New Englander has sown the seed of civil war. The belief in a difference is the precursor of enmity. Say to a man that he is not the same as another, and he immediately begins to formulate points of difference. Whenever he finds himself more fortunate, he pities, and, as a natural consequence, despises his rival. Whenever he finds himself less fortunate, he envies, and, as an equally natural consequence, hates. If the poet of the country doctor were inspired by true conditions, it would still be wise for him to refrain from inciting a sentiment that must inevitably tend to schism and mutual distrust. If, as we believe, his verses voice a false conception, they are not only a menace to professional unity, but an insult to both contrasted parties, each of whom is caricatured.

ACROMEGALY AND GIANTISM.

Several most interesting "missing links" between acromegaly and giantism have been supplied of late. On the one hand, Virchow and others have reported cases of marked increase, not merely of bulk, but of muscular strength in acromegalic subjects, followed, however, by rapid decline; and on the other hand, in two almost identical cases giants who were champion "strong men" and wrestlers up to their twenty-second and twenty-fifth years, respectively, after alleged "strains" during feats of strength, broke down and rapidly developed into well-marked cases of acromegaly, with characteristic marasmic symptoms. In the writer's case so much height was lost by the kyphosis and muscular collapse that the poor fellow was no longer available for exhibition purposes, while the attention attracted by the enormous overgrowth of his hands and feet was a source of much mortification to him.

Unfortunately, no light is thrown upon the relations of the two diseases by the results of treatment; nor is much to be expected, for if the dystrophy be due to an excessive pituitary secretion, whether normal or abnormal, but little is to be expected from the addition to the body-fluids of any form of pituitary extract. The negative results from its administration in the few cases in which it has been tried are not in any way surprising.

There appear to be, so far, only two other rays of light upon the problem which can be glimpsed—and they very feeble and remote ones. One comes from the group at the other end of the stature-scale, the dwarfs. Upon attempting to study them, the first fact that presents itself is that the "true" or healthy dwarf is almost as rare as the "true" giant. The study is far from complete, but so far as it has gone, a very large proportion of the cases are obviously due to either tubercular caries and curvature of the spine, hereditary syphilis, cretinism, or rickets. A non-pathologic dwarf is rare, and nearly fifty per cent. of them are rachitic. Furthermore, the "undergrowth" is in precisely the same situations in dwarfs as the overgrowth in giants, *viz.*, the lower limbs, arms, and jaws, the trunk being singularly little affected in proportion, so that their defect is much less noticeable in the sitting posture. Their facial angle is usually large, owing to the small jaw, and their foreheads prominent. Finally, in the two or three cases in which special measurements have been taken, the pituitary fossa is as markedly diminished in size, in proportion to the cranial circumference, as it is increased in the giants, although, in so small a number of cases, this may be a mere coincidence. Still, when the skeletons of an acromegalic giant and a rachitic dwarf are placed side by side, and carefully compared, the conviction rises almost involuntarily that they are actually the opposite extremes of one and the same process. The fact that we have already a definite pathologic condition, or rather name, to account for the latter is no bar to the suggestion, for the causation of rickets is almost as much of a mystery as that of acromegaly. Essentially, it appears to be an ataxic myxedema of the growth-zones of the bones, and has many features which strongly suggest that it also may be due to some disturbance of the internal secretions of the thyro-pituitary group. At all events, the administration of pituitary or thyroid extract in its earlier stages would be a perfectly legitimate experiment, and might lead to some interesting results.

The same narrowing of the pituitary fossa was found in each of three cretinous skulls examined, the fossa in one of them being reduced to a mere transverse slit, and Virchow, in his classic monograph, "Die Entwickelung des Schädelgrundes," gives drawings of two cretin skulls in which the same condition existed. He also speaks of this "sphenoidal kyphosis" as one of the characteristic signs of the cretin skull-base.

A careful survey of the field of comparative medicine has as yet revealed no similar dystrophy in the lower animals, unless it be the singular condition in horses known as osteoporosis, which has passed into popular idiom as the "big-head." As its names imply, the disease is characterized by, first, an extraordinary overgrowth of the jaws and facial bones, rapidly followed by porotic softening and breaking down of the hypertrophied tissues, usually ending in death from general marasmus within a year or eighteen months. It is a disease of young life (second to fourth year), occasionally attacks the bones of the feet and legs, and is in some cases associated with extraordinary precocity. Several members of a celebrated family of imported hackneys, that matured so early that as two-year-olds they swept everything before them in the show-ring, beating even four- and five-year-olds, died in their fourth or fifth year of osteoporosis, literally "falling to pieces under the strain of their own weight," as the attendant veterinarian graphically expressed it. In its localization, course, and results, therefore, the disease presents some show of family likeness to acromegaly. Unfortunately, the pituitary fossa in the horse is an extremely shallow groove, with hardly any definite boundaries, except in front, so that from a careful examination of a number of osteoporotic skulls it was impossible to decide whether the pituitary body had been enlarged or not. One other suggestion of possible bearing upon the problem has been made from a clinical standpoint, and that is whether the extraordinary disturbances of growth and general nutrition in children, associated with adenoids in the vault of the pharynx, "post-nasal growths," may not in some way depend upon the fact that this "pharyngeal tonsil" is, embryonically, simply the lower portion, or stalk, of the pituitary body, from which it has become separated by the ossification of the base of the skull. Not infrequently, in early life, a fibrous cord still runs up through the body of the sphenoid, connecting the two glands, and it is not unreasonable to suppose that structures which were originally continuous may yet retain reflex sympathy with and influence upon each other's condition. All who have studied the condition are agreed that the obstruction to respiration or other mechanical effects of these growths are utterly inadequate to account for the tremendous disturbances of nutrition, both bodily and mental, associated with them and relieved by their removal; and their "pituitary reflex" action has been suggested by no less an anatomical authority than Harrison Allen and endorsed by Osler and Dana.

One of the most convincing collateral proofs of the importance of the pituitary is to be found in its fascinating development and ancestral history, but into this the lack of space forbids us to enter. Suffice it to say that it is now regarded as the remains of, first, the primitive gullet, round which the entire brain was developed, and secondly, of a canal which connected the alimentary tube with the central canal of the nervous system. As the brilliant researches of Andriezen have shown, this canal is still open and functional in larval forms of Ascidians and Amphioxus, and a glandular mass is developing in its wall whose secretion exercises an important influence upon the nutrition of the nervous system. So conclusive were the results obtained by him that he actually ventured to predict the symptoms which would follow the destruction of the pituitary in mammals. About a year afterward experiments made by other investigators upon kittens resulted in the production of no less than four out of the five symptoms predicted by him.

From all which considerations, we venture to tentatively conclude:

First: That the pituitary body is still functional.

Second: That disturbances of its metabolism are the principal factor in both acromegaly and giantism.

Third: That it is not improbable that a similar factor exists in "dwarfism," rickets, and cretinism.

Fourth: That a reflex disturbance of its function may possibly underlie the dystrophy accompanying pharyngeal adenoids.

Fifth: That it would appear to be a sort of "growth-center" or proportion-regulator of the entire appendicular skeleton.

WOODS HUTCHINSON, M.D.

ECHOES AND NEWS.

The Northern Tri-State Medical Association.—This Association, consisting of representatives from Ohio, Indiana, and Michigan, will hold its next annual meeting at Ft. Wayne, Indiana, January 19, 1897.

Surgeon to the American Yacht Club.—It is reported that Dr. Charles I. Pardee, Dean of the Medical Department of the New York University, will be elected fleet surgeon at the approaching annual meeting of this club.

Cholera Carried to England.—A transport from Calcutta arrived at Plymouth, Eng., last week, and reported that five deaths from cholera had occurred among the soldiers and sailors during the passage. The ship has been quarantined, and other cases are expected.

Professor Chittenden Ill.—The severe illness of Professor Chittenden, who occupies the chair of Physiological Chemistry at the Yale Scientific School, has caused his friends much alarm during the past week. Happily, the latest accounts suggest some improvement in his condition.

New Medical Chief at Randall's Island.—Dr. Edward Kershner, formerly a medical inspector of the United States navy, has been appointed chief of the medical staff on Randall's Island, New York, in place of Dr. E. J. Tucker, recently removed by the Commissioners of Charities.

University of Pennsylvania Statistics.—A table recently issued by the University of Pennsylvania, Philadelphia, shows that the total number of students now in attendance at the University is 2811, of which 968 are in the medical department, and 373 in the department of dentistry. Forty-four states and territories, and thirty-four foreign countries are represented.

Pharmacists in Connecticut.—The State Medical Association of Connecticut has determined to bring a bill before the legislature of that State repealing the feature of the present medical practice act which exempts pharmacists from its provisions. It is asserted that many quacks now evade the law by becoming pharmacists. It will also be suggested that the registration fee for physicians shall be raised from $10 to $25.

The Germ of Yellow Fever Discovered.—A cable dispatch from Rio de Janiero to the *London Times* this week states that a young Italian, Giuseppe Sanarelli, by name, has undoubtedly discovered the yellow fever germ. Sanarelli is the director of the Uruguayan National Institute of Experimental Hygiene, and a follower of Pasteur. He is said to have sent an account of his discovery under seal to the Academy of Medicine at Rome.

The New York Academy of Medicine.—At the annual election, held Thursday, January 7th, 1897, the following officers were chosen: President, Edward G. Janeway, M.D.; vice-president, Everett Herrick, M.D.; trustee, Joseph D. Bryant, M.D.; trustee, to serve three years, Clement Cleveland, M.D.; member of committee on library, Charles H. Knight, M.D.; member of committee on admissions, T. E. Satterthwaite, M.D.

Doctors Strike for Higher Fees.—A strike of doctors at Yarmouth, Eng., has just failed. The physicians in the town demanded higher fees from the benefit associations than had been paid, and a limitation of the classes of patients to be attended at club rates. The associations combined, and finding that they provided $10,000 worth of business a year, established a central office of their own, hiring a doctor from out of town to manage it.

Scarlet Fever Caused by Infected Milk.—A group of cases of scarlet fever at East Orange, N. J., affords corroborative evidence of the theory that epidemics of scarlet fever may be caused by infection derived from the milk supply. Nearly all the victims in this group are grown persons, and the sanitary officers claim to have obtained conclusive proof that the germs were brought to the afflicted families in milk supplied by a man whose helper in the dairy was convalescent from the disease.

Semi-Centennial of the New York Academy of Medicine.—The invitations to the Semi-Centennial Celebration of the Academy, beautifully engraved and entirely worthy of the Academy and the occasion, have been issued. The exercises will consist of addresses by President Cleveland and Dr. Joseph D. Bryant, and an oration by Dr. A. Jacobi, at Carnegie Music Hall, and a reception in the parlors of the Academy, with music and refreshments. A most enjoyable and edifying experience is anticipated by all who attend. The date of the celebration is January 29th.

The Bubonic Plague at Bombay.—The disastrous effects of this scourge, which have been noted from time to time in these columns, seem now to be greater than ever. Since the appearance of the disease Bombay has lost more than 300,000 inhabitants, who have fled to the country districts. The absence of all quarantine restraint makes it altogether probable that the infection has thus been spread over a wide area. In conjunction with the famine now afflicting the Indians their numbers will be seriously reduced by the "Black Death."

Protest of the N. Y. Medico-Surgical Society.—At a stated meeting of the N. Y. Medico-Surgical Society, held on January 4, 1897, the following resolution was unanimously adopted. "*Resolved*, That the President appoint a committee of three to draw up resolutions protesting against the clause in the draft of the charter for the Greater New York, which reads as follows: 'The Health Commissioner, who is not a physician, shall be President of the Board.'" The Committee was further instructed to present said resolutions to the proper authorities.

Aphasia of the Hand.—It may be readily appreciated that when a deaf-mute has lost the power of expression by the ordinary manual alphabet the condition is something more than simple agraphia. Such a case is reported by Professor Grasset of Montpellier, France. A man, who since his childhood, had practised the finger language and employed his right hand almost exclusively, after the occurrence of a cerebral thrombosis, was found to be entirely unable to communicate with this hand either by the sign language or in writing, although the paresis of the member was insufficient to account for his aphasia. With the left hand he still expressed himself without difficulty.

Sir Astley Cooper's Largest Fee.—The largest fee ever received by Sir Astley Cooper was tendered to him in a somewhat original manner. He had been attending in his capacity of surgeon a West Indian millionaire named Hyatt, with Drs. Lettsom and Nelson as physicians. The treatment was most successful, and in his joy Hyatt bestowed 300 guineas on each of the doctors. "But you," exclaimed the grateful patient, addressing Sir Astley, "you shall have something better." With this he flung his nightcap at the eminent operator. "Sir," replied the latter, "I'll pocket the affront." And he slipped the "affront" into his pocket. It contained a draft for 1,000 guineas.

The Interment of Pasteur.—On the 26th of December the impressive ceremonies attending the removal of the remains of Louis Pasteur, from Nôtre Dame to the splendid mausoluem which has been erected as their final resting place, occurred. Such a convocation of men of the highest rank in science has rarely been witnessed. Besides the throng of French delegates many foreign representatives were present. The final ceremony at the crypt consisted of the usual religious rites, and of the consignment of his father's body to the care of the future authorities of the Institute Pasteur by the only son, M. J. B. Pasteur, who is First Secretary of Legation at Madrid. M. Bertrand responded, accepting the trust, and eulogizing the illustrious founder of the Institute. These remarks were followed by short addresses from MM. Ramband, Paul Baudent, and Legouvé. The British delegates, Sir Joseph Lister, Sir Dyce Duckworth, Sir William Priestley, Sir John Evans, and Professor Crookshanks, spoke next. After them, remarks were heard from MM. Cornu, President of the Academy of Science; Bergeron, Perpetual Secretary of the Academy of Medicine; Perrot, Director of the Ecóle Normale; Tessier, President of the Student's Association, and lastly, M. Ducleaux, who paid a feeling tribute to his old and honored master.

Infection by Pets.—A case is narrated in *La Médecine Moderne* of a seamstress who was in the habit of allowing her dog to lick her face. Her right eye was attacked with inflammation which became so severe as to endanger the safety of the left one. Enucleation of the right eye became necessary, and in it was found a tape worm, which the dog had probably picked up while licking some less pleasing object. The danger of the transmission of parasites by dogs in this way, owing to the prevalent custom of allowing dogs to lick the hands and faces of their masters and mistresses, is a great one. The wonder is that accidents similar to the one narrated do not happen oftener than they do.

N. Y. State Medical Society.—The ninety-first annual meeting of this Society will be held at Albany, January 26, 27, and 28, 1897. Provisional Program: Tuesday Morning Session, 9.15 o'clock. President's inaugural address. Reports of officers and committees. Executive business. Papers—1. Two cases of Acute Intestinal Obstruction from Foreign Body, with Operation, Dr. C. Wilmot Townsend, New Brighton. 2. Excision of the Coccyx for Fracture and Necrosis, with a report of three cases, Dr. Edward N. Liell, New York. 3. The Fitting of Glasses, Dr. M. L. Foster, New York. 4. A Contribution to the Study of Cough due to Irritation of the Upper Respiratory Tract, Dr. Chas. N. Cox, Brooklyn. 5. A Consideration of Prolapsus Uteri, with Especial Reference to its Radical Treatment in the Aged, Dr. Andrew F. Currier, New York. 6. Some Diseases of the Alimentary Canal in the light of its Development and Ancestry, Dr. Woods Hutchinson, Buffalo. 7. Some Unusual Causes of Cough, Dr. Emil Mayer, New York. Election by districts of members of the Committee of Nomination at close of morning session.

Tuesday Afternoon Session, 2.15 o'clock. 1. Fancies and Fact in our Work, Dr. Joseph Eastman, Indianapolis, Ind. 2. The Correction of Depressed and Saddleback Deformities of the Nose by Operations performed subcutaneously, without the aid of Metallic or other Artificial Supports, Dr. John O. Roe, Rochester. 3. Gauze Drainage in Surgical Gynecology, Dr. W. E. Ford, Utica. 4. Observations on Abdominal and Pelvic Surgery. Preparation, Operation, and Results, Dr. W. Gill Wylie, New York. 5. The Merits of Abdominal Hysterectomy (with modified technic) for large Tumors, as contrasted with the Operation of Morcellation, Dr. Chas. A. L. Reed, Cincinnati, O. 6. Absorbable Ligatures and Sutures in Pelvic Surgery, Dr. Walter B. Chase, Brooklyn. 7. Obstetrical Discussion: I. Introduction—Puerperal eclampsia, Dr. William Warren Potter, Buffalo. II. Indications for, and technic of, the Induction of Premature Labor, Dr. James P. Boyd, Albany. III. Infection of Puerpera, Dr. A. B. Miller, Syracuse. IV. Obstetric Delivery by Abdominal Section—indications and methods, Dr. Willis G. Macdonald, Albany. V. Relations of Posterior Displacements to Pregnancy, Dr. Matthew D. Mann, Buffalo. VI. Present Treatment of Fibroids associated with Pregnancy, Dr. A. Vander Veer, Albany. Discussion by Dr. W. M. Polk, New York; Dr. H. J. Boldt, New York; Dr. C. A. Von Ramdohr, New York, and Dr. Geo. M. Edebohls, New York.

Tuesday Evening Session, 7.15 o'clock. [This session will be held in the Bender Hygienic Laboratory.] Papers—1. Practical Application of X-ray in a Case of Fracture, Dr. William Hailes, Albany. 2. Photography of the Living Urinary Bladder, Exhibition of Photographs and Instruments and some Improvements in Urethroscopic Apparatus, Dr. W. K. Otis, New York. 3. X-ray Stereopticon Exhibition, Dr. Wm. J. Morton, New York. Inspection of the Laboratory by members and guests.

Wednesday Morning Session, 9.15 o'clock. Papers—1. A Contribution to the Study of Amebic Dysentery, Dr. Chas. E. Lockwood, New York. 2. Practical Points relating to the Diagnosis and Management of Syphilitic Brain Diseases, Dr. E. C. Spitzka, New York. 3. The Treatment of Locomotor Ataxia, Dr. Landon Carter Gray, New York. 4. A Case of Erythro-Melalgia, Dr. Henry L. Elsner, Syracuse. 5. Strophanthus; a Clinical Study, Dr. R. W. Wilcox, New York. 6. Should not the Credé Method be made Obligatory, Dr. Lucian Howe, Buffalo. 7. Discussion on the Relation of Impure Drinking Water to Disease, and the Cure and Prevention of the latter: I. Common causes of the Contamination of Drinking Water, Dr. T. M. Cheesman, New York. II. Diseases which can be directly traced to Contaminated Drinking Water, Dr. Geo. Blumer, Albany. III. Statistical Inquiry into the relation of Contaminated Drinking Water and Typhoid Fever, Dr. J. S. Billings, Jr., New York. IV. Dangers of the domestic use, other than drinking, of Contaminated Water, Dr. R. G. Freeman, New York. V. Methods of Purification of Impure Water, Dr. T. B. Carpenter, Buffalo. VI. Methods of Prevention of Pollution of Water, Dr. E. K. Dunham, New York. VII. Life History of the Typhoid Bacillus outside the body, Dr. F. C. Curtis, Albany. VIII. Bacteriological Diagnosis of Typhoid Fever, Dr. J. S. Ely, New York. IX. Typhoid Fever in Children, Dr. W. P. Northrup, New York. X. Medicinal and Dietetic Treatment of Typhoid Fever, Dr. W. S. Ely, Rochester. XI. External and Internal use of Water in Typhoid Fever, Dr. C. G. Stockton, Buffalo. XII. Importance and Practical Method of Disinfection of Excreta of Typhoid Patients, Dr. W. G. Thompson, New York.

Wednesday Afternoon Session, 2.15 o'clock. 1. Double Murphy-Button and Anastomosis, Dr. J. H. Glass, Utica. 2. Some Clinical Cases of Disease of the Testicle, Dr. L. B. Bangs, New York. 3. Hereditary Syphilis, Dr. A. Jacobi, New York. 4. Acute Inflammation of the Gall Bladder, Dr. Maurice H. Richardson, Boston, Mass. 5. Personal Experience in Hernia of the Bladder, Dr. C. L. Gibson, New York. 6. The Management of Club Foot, (*a*) when to commence, (*b*) how to apply simple and efficient mechanical treatment, (*c*) when to operate, (*d*) choice of operative procedure, (*e*) rules governing the same, Dr. A. M. Phelps, New York. 7. Rectal Discussion: I. Stricture of the Rectum, its Etiology and Treatment, Dr. Joseph M. Matthews, Louisville, Ky. II. The Surgical Treatment of Cancer of the Rectum, Dr. Daniel Lewis, New York. III. When is Colotomy Justifiable, Dr. Charles B. Kelsey, New York. IV. The Proper Method of Treating Internal Hemorrhoids, Dr. Robert T. Morris, New York. V. Preventive, Operative, and after Treatment of Fistula in Ano, Dr. Edward Clark, Buffalo. VI. Prolapse of the Rectum, Dr. George R. Fowler, Brooklyn.

Wednesday Evening Session in the Senate Chamber, 7.45 o'clock. Anniversary Address by the President. Annual dinner at the Kenmore Hotel, 9.30 o'clock.

Thursday Morning Session, 9.30 o'clock. Report of the Committee on Nominations. Papers.—1. The Importance of Choked Disk (optic neuritis) as a Symptom of Brain Tumor, Dr. Wm. C. Krauss, Buffalo. 2. Notes of Cases in Suggestive Therapeutics (hypnotism), Dr. H. S. Drayton, New York. 3. The Comparative Value of Optometric Methods, Dr. C. M. Culver, Albany. 4. Deficient Excretion from Kidneys, not originally diseased, and some Diseases Peculiar to Women, and Diseases of the Skin, Dr. L. Duncan Bulkley, New York. 5. The Necessity of new Methods of early Diagnosis in Tubercular Disease to Curative Treatment, Dr. J. B. Ransom, Dannemora. 6. A Rare Complication of Acute Rheumatism, Dr. Eugene Beach, Gloversville. 7. A Case of Hernia of a Sarcomatous Ovary, Dr. George Seymour, Utica.

CORRESPONDENCE.

INTRAVENOUS SALINE INJECTIONS.

To the Editor of THE MEDICAL NEWS.

DEAR DOCTOR: I was interested in reading the article in your issue of December 19, 1896, by Dr. L. A. Stimson, on intravenous saline injections in shock and in septic conditions. In sudden loss of blood, the increase of intra-arterial pressure by the injection is, of itself, important, and has been the means of saving life. In septic conditions, its use is new; but if, by osmosis, or by supplying certain needed elements to the blood, it enables the system to rally against the infection and to aid in overcoming it, it is worthy of extended trial. If food can be safely combined with the saline infusion, then it is worthy of a fair trial and the fullest investigation.

One experience has convinced me of its safety: Mrs. M., aged forty-five, married and mother of grown children, had been ill several months in the winter and spring of 1895 with some pelvic inflammatory trouble, which proved to be tubal gestation. She was confined to bed at intervals. In April she grew worse, and septic symptoms became manifest. About the middle of May, I was called in consultation with others. The patient was now in a serious septic condition, with small, but decided, tumor at the site of the left ovary and tube. During the previous twenty-four hours she had had two severe hemorrhages with pus, from bowel, which, without doubt, had come from rupture of abscess into rectum. For thirty-six hours, gradual but deepening coma was manifest. Though the condition was desperate, in consultation it was deemed best to operate at once. Under ether anesthesia, I opened the abscess through the abdomen, adhesions protecting the general peritoneal cavity. Blood clots and débris of tubal gestation were quickly turned out, and the cavity irrigated and drained with antiseptic gauze, the operation being done in a few minutes. The condition of the patient did not justify the hope that she would live an hour.

While using other means, I had the little transfusion apparatus of Jennings and a sterilized saline infusion in readiness. There was also a pint of peptonized milk at hand; so I determined to mix the two solutions, in equal parts, and inject through the median basilic vein. Peptonization of milk (which had been prepared by a capable nurse) would prevent its coagulation. The milk and ordinary saline infusion for transfusion were mixed and strained. I immediately opened the vein, and, with the assistance of the attending physician, injected a quart slowly, at a temperature of about 100°. The coma slightly improved, but only temporarily; but the pulse, which was 160, did improve quickly and decidedly in volume and beats, dropping to 130, with an improved tone. This condition was very well maintained, but after a few hours gradually declined. About five hours from the first injection, the same quantity of saline and milk was injected through the same vein, with same manifest improvement in the circulation. But the coma gradually deepened, the circulation, after several hours, again failing, with no improvement in other respects. The case was regarded as hopeless, and the injection was not repeated. The patient died twenty hours after the operation. The profound exhaustion from sepsis really caused death. Though the fatal result was aided by hemorrhage and shock, these, I believe, did not determine it. Though I had not heard before of milk being used in this manner, I believe its effect was good and the transfusion undoubtedly prolonged life. I should use it again, under similar circumstances, and believe it indicated in shock and loss of blood, and worthy of impartial trial in certain septic cases, even though much less profound than the one embodied in this report.

The use of warm saline infusions in the peritoneal cavity during some laparotomies, to prevent as well as to relieve shock, is known to surgeons. The application of the saline solution to the large peritoneal surface, by its absorption, and probably by the heat to the large nerve ganglia, is of greatest benefit; yet, in some of the more urgent cases, the good effect, I believe, would be more quickly manifested by its intravenous use, and, if support is needed, by the addition of carefully prepared peptonized milk.

In Case V, Stimson, patient suffering from general peritonitis due to perforative appendicitis, life, it is stated, was prolonged three days after operation by intravenous saline injections, when the patient died from intestinal paralysis.

It is of the latter I wish to speak, by reference to the following similar case: On January 27, 1894, I operated on Mrs. W. for gangrenous appendicitis, gas and pus having by perforation escaped into the peritoneal cavity, inducing general peritonitis. On the fourth day after, while progressing satisfactorily from the operation, a laxative having previously been given without effect, intestinal paralysis was painfully manifest. The patient was vomiting frequently and copiously, dark, liquid, fecal matter, which was very offensive. No medicine except the laxative had been given. Speedy dissolution was inevitable, unless the bowels could be moved. Enemas and cathartics are useless in these cases, so I aspirated the transverse colon, without ether, removing a large quantity of liquid fecal matter and gas. Vomiting at once ceased. The bowels moved naturally eighteen hours later, and the patient progressed to a safe recovery, which was due, undoubtedly, to the aspiration.

This condition of the intestines is due to sepsis, aided and aggravated, in many cases, by distention from gas and fecal matter. Medicines are generally useless. The bowels have been incised for relief. Aspiration should be tried in preference to other operative means, because simple and usually devoid of shock and danger, while ether and a more elaborate operation must add to the gravity of the situation. Respectfully,

W. W. Grant, M.D.

Denver, Col., January 9, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

STATUE TO DR. SAMUEL D. GROSS—ELECTION OF OFFICERS OF THE COLLEGE OF PHYSICIANS—MEETINGS OF THE OBSTETRICAL SOCIETY AND OF THE SECTION OF GENERAL SURGERY OF THE COLLEGE OF PHYSICIANS—LECTURE ON TYPHOID FEVER BY DR. J. C. WILSON, AT JEFFERSON MATERNITY HOSPITAL—AID FOR A PAY HOSPITAL FOR CONTAGIOUS DISEASES.

January 9, 1897.

It is expected that the bronze statue of Dr. Samuel D. Gross, by A. Stirling Calder, recently cast in Paris, will arrive in this country during the present month, and will be erected near the Army Medical Museum in the grounds of the Smithsonian Institute at Washington. The movement for the erection of a statue to Dr. Gross was begun by the American Surgical Association, of which he was founder and first president. With the coöperation of the alumni of Jefferson Medical College, and other warm personal and professional friends, the necessary funds were collected. Congress appropriated a sum sufficient for the erection of a suitable pedestal, and the monument is to be unveiled by a granddaughter of Dr. Gross during the next Congress of Physicians and Surgeons in Washington. This statue is the second of its kind erected in this country to a physician. The other, in New York, being to

Dr. J. Marion Sims, a personal friend and contemporary of Dr. Gross.

At the annual meeting of the College of Physicians, held on January 6th, Dr. J. M. Da Costa announced the death of Dr. Theodore G. Wormley and Dr. William H. Pancoast, and paid a feeling tribute to the memory of these widely-known physicians. Dr. J. M. Anders read a memoir of Dr. H. Ernest Goodman, who died last February. The following officers were elected for the ensuing year: President, Dr. J. M. Da Costa; vice-president, Dr. John Ashhurst, Jr.; censors, Drs. Alfred Stillé, William F. Norris, R. A. Cleeman, and A. V. Meigs; secretary, Dr. Thomas R, Neilson; treasurer, Dr. Henry M. Fisher; honorary librarian, Dr. Frederick P. Henry; member of the council, Dr. G. E. de Schweinitz; committee of publication, Drs. G. G. Davis, D. T. Lainé, and Thompson S. Westcott: library committee, Drs. G. C. Harlan, F. X. Dercum, Charles A. Oliver, Wm. J. Taylor, and C. B. Penrose; committee on Mütter Museum, Drs. John H. Brinton, Harrison Allen, and George B. McClellan; hall committee, Drs. J. Ewing Mears, Morris J. Lewis, W. B. Hopkins, John K. Mitchell, and Casper Morris; committee on Directory for Nurses, Drs. Wharton Sinkler, J. C. Wilson, and J. V. Ingham.

Before the Obstetrical Society at its last meeting, Dr. Charles P. Noble presented "A Contribution to the Technic of Operation for the Cure of Laceration of the Pelvic Floor in Women," and Dr. Richard C. Norris read "A Clinical Report of a Year's Work at the Preston Retreat."

At the meeting of the Section of General Surgery of the College of Physicians, held January 8th, Dr. Charles H. Frazier read a paper on "An Operation for the Removal of a Myxofibroma of the Root of the Neck." Dr. Thomas S. K. Morton gave an interesting talk on "Fractured Ribs in the Aged." Dr. John B. Roberts thought that the interposition of a strand of muscle or periosteum between the ends of the fractured bone might be a possible cause of the frequency of ununited fracture of the humerus. Dr. Alfred C. Wood exhibited a patient from whom he had removed gouty deposits connected with the extensor tendons of the fingers and the anterior aspect of each knee, amounting to nearly a pint.

Dr. W. W. Keene was elected chairman of the Section for the ensuing year.

In the course of lectures which is being given at Jefferson Maternity Hospital, Dr. James C. Wilson had as his subject yesterday, "The Prevention and Care of Typhoid Fever, with Details of the Cold Bath Treatment." The statistics of the German Hospital, where Brand's treatment has been in use, up to January 1, 1896, showed that out of 524 cases treated there 38 had died, a percentage of mortality of but 7.25.

A concert, progressive euchre, and dance was given Wednesday evening at the Academy of Fine Arts, under the auspices of the joint committee of the Woman's Health Protective Association and the County Medical Society, in aid of the building fund for a pay hospital for contagious diseases. About 800 persons were present.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

THE ETIOLOGY OF APPENDICITIS—TREATMENT OF PRIMARY CANCER OF THE LIVER—EXPERIMENTS IN PULMONARY SURGERY ON DOGS—VALVULAR RUPTURE IN A CYCLIST—PLEURISY WITH EFFUSION DIAGNOSED BY MEANS OF THE ROENTGEN RAY.

Gautier reported before the Academy of Medicine, December 8, 1896, that two patients, a man and a child, who had used milk from tin cans were seized with colic, cramps, etc. It was assumed that they had been poisoned by lead in the milk, as the tinning in the can contained lead. But there is no possibility of milk taking up lead, except under certain conditions, as, for instance, on souring. There was no evidence that the milk was sour, and it was not analyzed. The symptoms were, in all probability, those of intoxication from bacterial fermentation in the milk, resulting from uncleanliness.

In the Surgical Society, session of December 2, 1896, **Brun** combated the theory advanced by Dieulafoy that appendicitis results from the closing of the cavity of the appendix. He had seen cases in which the appendix had been transformed into an absolutely closed cavity without the slightest symptom of septic appendicitis. Further, a number of cases are on record in which, at an operation for the relief of peritonitis of appendicular origin, the appendix was found normal in size, without stenosis or phenomena of retention. Moreover, in appendicitis, the lesions are not always localized in the appendix. The affection frequently appears in children who have previously suffered from enteritis or enterocolitis, and this more general inflammation may even exist after the appendix has been resected.

Walther quoted several cases in which appendicitis supervened in the course of acute and chronic enterocolitis.

Jalaguier held that, in the immense majority of cases, obstruction of the appendix was the result, not the cause, of appendicitis, and that this affection was merely an inflammatory one, usually supervening in the course of general infection of the digestive tract.

The discussion of this question was continued December 9th, when **Broca** said that he had seen several cases with generalized peritonitis which began in an appendix thoroughly permeable.

Tuffier endorsed the opinion already expressed that appendicitis was merely a localization of enteritis. The shape and structure of this organ were exceptionally favorable for perforation. He desired to call attention to a neglected side of this question, namely, intestinal obstruction consecutive to appendicitis.

Segond discussed the *diagnosis and surgical treatment of primary cancer of the liver.* Only twelve cases of resection of the liver for malignant tumors (nine carcinomata, three sarcomata) have been recorded. In all of these cases the operation was successful. A woman from whom he had removed a large fibrocystic tumor of the liver died in twenty-four hours from operative shock. The tumor, which was a trabecular epithelioma with polymorphous cells, sprang from the lower surface of the liver by pedicle. As in most of the recorded cases, the pedicle in this case was treated extraperitoneally.

TERRIER said that the tendency at present, especially in Russia, was to use ligatures placed on the base of the tumor, so as to avoid an external pedicle.

BROCA reported an esophagotomy on an infant six months of age, for the purpose of removing a metal brooch which the child had swallowed a fortnight before, and which could not be felt by a sound previous to operation. The surgical procedure was entirely successful. The diagnosis in such cases is very difficult.

QUÉNU made a brief statement of the results obtained in sixty *experiments in pulmonary surgery on dogs.* All animals in which the pleura was freely opened presented symptoms of dyspnea, and twelve out of fifteen died asphyxiated. It was thus shown that free opening of the pleural cavity is a serious matter when the pleura is healthy. If the visceral pleura was kept in contact with the chest wall, either by suture or by the use of intrapulmonary pressure, its cavity could be opened without danger. The latter condition was accomplished by causing the dogs to breathe compressed air. The results by this method were so favorable that Quénu unhesitatingly recommended it in operations upon the human thorax. Other investigators have shown that this intrabronchial pressure, if it does not go beyond the limits of the elasticity of the lungs, *i. e.*, beyond what is necessary for preventing pneumothorax, is absolutely harmless; and that it does not interfere with the circulation in the lungs, and has little influence on the general circulation.

In the Medical Society of the Hospitals, at the meeting of December 4, 1896, **LAUNOIS** presented a case of *aortic regurgitation due to valvular rupture in a cyclist.* The patient was a man, aged thirty-eight, with no history of rheumatism, or infectious disease, or syphilis, but who had been since 1882 an enthusiastic cyclist, and afterward a well-known long-distance rider. Functional disorder, due to the aortic regurgitation, was remarkably slight.

MENETRIER reported a case of typhoid fever complicated by pleurisy, the interest of which lay in the fact that the pleural serous effusion exerted no agglomerating action on Eberth's bacillus. **WIDAL** and **SICARD** had found an agglomerating reaction in the pleural effusion withdrawn at the autopsy of three typhoid fever patients. If a pleural effusion formed rapidly, this reaction might be absent. Thus, it is present in the normal tears of a typhoid fever patient, but is absent in tears copiously produced by the inhalation of ammonia.

In the session of the Biological Society, held December 5, 1896, **MAYET** reported the results of investigations to determine the *effect of intravenous injections of salt solutions on the red blood-corpuscles.* He found that a solution of sodium chlorid 6–1000 not only did not change the form of the corpuscles, but also did not affect their elasticity. He objected to the addition of sodium sulphate to the solution. The best method of injection is not to denude the vein, but simply to introduce a small hollow needle into a vein which has been distended by a ligature about the limb.

MOTZ examined microscopically thirty hypertrophied prostate glands. In nineteen (or 66.4 per cent.) the glandular tissue was abundant; in ten (33.3 per cent.) this tissue was rare; in one it had completely disappeared. Arterio sclerosis is never found in a prostate in which the glandular tissue occupies two-thirds or more of the section, and this sclerosis is rare even when there is an equal amount of glandular tissue and stroma. It is therefore improbable that arterio sclerosis is the principal cause of hypertrophy of this organ.

At the meeting of the Academy of Sciences held December 7, 1896, **BOUCHARD** discussed the value of the *Röntgen ray in the diagnosis of pleurisy.* In three patients he had found that the area corresponding to the effusion was occupied by a dark tint in sharp contrast with the light color of the healthy side. This method of diagnosis is not any more certain or satisfactory than the procedures usually employed at present, but it has a great advantage in that it is thus possible to demonstrate to an entire audience the existence, extent, and depth of an effusion which otherwise could only be made out by a personal examination of the patient. Bouchard believes that an examination by means of the Röntgen ray will be found as useful in medicine as in surgery.

Vienna.

PROGRESS OF CREMATION — SUCCESSFUL REMOVAL FROM THE ESOPHAGUS OF A FOREIGN BODY CAUSING SERIOUS HEMORRHAGE — THE VALUE OF A BLOOD COUNT IN CANCER.

ENGERTH read an exhaustive and interesting paper on *cremation* before the Society of Physicians, November 27, 1896. As carried out according to the best methods, the body is placed in an iron receptacle the walls of which are brought to a white heat. Upon the introduction of air raised to about 1000° C., the body is ignited and burns in its own flame. Such a cremating oven costs from $1500 to $2000. The cremation of a single body costs from $2 to $3, but if several are cremated one after another the expense is reduced to about 50 cents apiece, so that the financial as well as the hygienic gain to the inhabitants of large cities is very great. It is interesting to notice that the chemical changes produced by cremation in two hours are almost the same as those produced during fifteen years by burial. Among the Christian nations there were in 1894, 110 cremation societies with 37,000 members, and 53 crematories, 23 of which were in Italy, and 18 in America.

At the session of December 4, 1896, **HOCHENEGG** presented a patient upon whom he had operated for a *foreign body lodged in the esophagus.* The hasty swallowing of large mouthfuls of food gave rise to intense pain. As no foreign body could be detected by the sound it was inferred that the esophagus had been lacerated. The symptoms continued, and later there were several serious hematemeses, and a swelling developed in the left side of the neck below the thyroid. At operation this swelling was found to be due to an abscess set up by a piece of chicken-bone which had pierced the esophageal wall. The ulceration had eroded the wall of a dilated vein and so caused the hemorrhage. Hemorrhage from a foreign body in the esophagus is of rare occurrence. In 180 cases it was met with only ten times. In all of these it appeared after the sixth day, and was therefore secondary to ulceration. Of these ten cases only one was saved. The author spoke of the uncertainty of the results obtained by sounding the esophagus and of the value of the esophagoscope in making an early diagnosis.

At the session of the Medical Club held November 25, 1896, BERDACH showed a fifteen-year-old boy who some days before had fallen upon his right shoulder. He could not move the right arm after the accident. The contour of the shoulder was much flattened, but examination showed that there was no dislocation or fracture. Passive motions were free in every direction. The case was one of paralysis, and the interesting question in connection with it was whether it was caused by the accident or had previously existed. The boy had had scarlet fever and diphtheria, but as the paralyses from these are always bilateral and only temporary, they need not be further considered. Careful questioning elicited the information that for some time the right arm had been weaker than the left, and could not be raised above the shoulder. The case was undoubtedly one of acute anterior poliomyelitis, and is interesting as showing how the trauma had suddenly completed the paralysis.

In a discussion on the *practical results of the examination of the blood*, LIMBECK spoke of the great increase in white blood corpuscles which frequently occurs in cases of medullary sarcoma and lympho-sarcoma. The resemblance between the blood in these conditions and in leucemia is very great, so that a differential diagnosis is not easily made. The increase of white blood corpuscles in sarcoma is really due to the existence and growth of the tumor, and disappears with the removal of the new growth. Upon this circumstance rests the significance of the examination of the blood in sarcoma. Some years since, the left leg of a man who had a medullary sarcoma of the tibia was amputated through the knee-joint. It was desirable to know whether or not there were metastases remaining. The high leucocytosis fell after the operation, and was no greater than could be accounted for by the wound. Some weeks later there was a marked increase of white blood corpuscles, although neither in the cicatrix nor elsewhere could a new growth be found. The patient failed and died, and the autopsy showed multiple sarcomata in the lungs.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, November 11, 1896.

The President, DR. J. C. WILSON, in the chair.

J. T. RUGH, M.D., read a paper entitled

EIGHT PRIMARY MOVEMENTS OF THE NORMAL SPINE AS A BASIS FOR THE GYMNASTIC TREATMENT OF SCOLIOSIS AND ALLIED CONDITIONS.

These movements consist in (1) bending forward, (2) bending backward, (3) bending to the right, (4) bending to the left, (5) combining these movements in circumduction to the right, (6) combining these movements in circumduction to the left, (7) rotation of the spine upon its vertical axis to the right, (8) rotation of the spine upon its vertical axis to the left. This nomenclature is in accord with that of anatomists, who describe the normal movements of joints as flexion, extension, adduction, abduction, circumduction, and rotation. Other movements of which a joint is capable are but modifications of these. In all cases of scoliosis there is more or less rigidity of the spine as a result, not of inflammatory or other pathologic condition of the bony or muscular structures, but of the muscular debility, inactivity, and atrophy, and of the long continuance of the malposture. With this rigidity there is also limitation of movement in one or more directions. The exact degree of such rigidity and limited motion can be ascertained by having the patient perform the primary movements mentioned and noting the degree of flexibility of the spine. The guide to the gymnastic treatment is thus obtained, and exercises that will increase the motion in the desired directions can be prescribed. As all movements are limited to the eight cardinal forms, variety can be had only by change of position. By this means total correction of the deformity in some and partial correction in all may be effected. While certain movements are indicated in certain cases, they are contraindicated in others. The relation that the arms and legs bear to the spine are most important as altering the contour of the latter. If the arm is raised or extended, the spine assumes a curve toward the corresponding side. The same result follows movements of the legs in consequence of tilting of the pelvis upon change in the relative lengths of the legs by lifting or moving one of them in any direction. In this way a lumbar curve may be obliterated; or a dorsal curve, by properly adjusting the arms. By a combination of these two the "key-note" positions, or those in which the greatest amount of correction is secured, are assumed, with a better result in treatment. For the purpose of multiplying exercises, all those positions may be assumed that to a greater or less extent obliterate the existing deformity, such as lying prone or supine upon the floor or a table; sitting on the floor, on a chair, or on a stool, with the legs in various positions, or one hip raised; standing with the feet together, the feet separated, one advanced or retracted; standing on one foot; using the rings, trapeze, or bars; kneeling on one or both knees; squatting, and so on.

DR. H. C. WOOD introduced Mr. Lewis A. Tallerman of London, who demonstrated the Tallerman-Sheffield patent local and medical dry-air bath, and showed the method of its application in the cases of two patients from the Philadelphia Hospital, one suffering from saturnine gout, and the other from lumbago. Both were very materially helped, the patient with lumbago, after having suffered so severely as to require aid to get about, and then only with great pain, being able subsequently to the treatment to walk with ease and comfort. The temperature rose about a degree in forty minutes and the pulse increased nine beats in frequency, gaining also in fulness. The temperature within the apparatus was 260° F., and the pelvis was inclosed for forty minutes. The patient with saturnine gout was able to move joints that had not been moved for a long period of time, and not only those exposed directly to the influence of the apparatus, but also those at a distance and not treated directly. After an exposure of fifteen minutes the man was able to move the worst toe, while the pulse increased twenty beats in frequency, and the temperature had risen 1.4°. The temperature within the cylinder was kept at 260° F. for three minutes; it was then reduced to 255°. Most of the time it was 248°. The apparatus consists essentially of a hollow cylinder surrounded with asbestos, and capable of being closed at either end. The interior of the cylinder, wherein the part to be treated is placed, can be heated by gas to temperatures of 260° and more. Provision is made for the escape of moisture, as well, of course, as for the regulation of the temperature, so that the heat is always practically dry, and thus more tolerable than if it were moist.

MR. TALLERMAN said that among the therapeutic effects of his apparatus are an enormous increase in the activity of the circulation, profuse perspiration of the whole of the body, relaxation of the parts, dilatation of the vessels, and an increase in the bodily temperature of from 1½° to 4° F., with a return to the normal in from fifteen to twenty minutes. In rheumatic affections, rheumatoid arthritis, gout, lumbago, sciatica, sprains, and kindred disorders, pain is relieved or entirely removed. The first treatment is usually followed by relief of pain and freedom of movement. The progress of the disease appears to be arrested and a curative process to be set up. The benefit is not confined to the parts exposed to treatment within the apparatus, but extends to remote parts not directly subjected to the heat. The procedure is entirely painless and rather soothing in its effects, patients manifesting a tendency to sleep during its operation. In chronic cases, when the joints are rigidly fixed by firm adhesions, it has proved wise to treat the limb for a short time in a preparatory way before more active interference is undertaken, and then to break down the adhesions under an anesthetic. If the member is then treated again as soon as the effects of the anesthetic have begun to pass off, the heat exerts an anodyne influence, and the pain subsides in a short time. The apparatus has been employed for several years in a number of large London hospitals, with generally advantageous results.

In answer to inquiries, Mr. Tallerman stated that probably several applications of the treatment would be necessary to insure permanent improvement in cases like those exhibited. To avoid ill effects as a consequence of the treatment, the patients should be briskly rubbed down afterward with a coarse towel. In cases of rheumatoid arthritis, the treatment could be employed four or five times a week at first, and subsequently with less frequency.

There is a special apparatus for the pelvis and for the hand, in addition to that for the leg.

MAX J. STERN, M.D., presented a communication entitled

REPORT OF WORK WITH RÖNTGEN RAYS AT THE POLYCLINIC HOSPITAL, WITH EXHIBIT OF SKIAGRAPHS.

The work was carried out in a large, airy room, darkened, in order that the amount and color of the light in the tubes might be better observed, and because the retina, accustomed to the surrounding darkness, is much more sensitive to an appreciation of the value of an image on the fluorescent screen. The deeper the green light in a tube, and the greater its coincident intensity, the more X-rays are being given off. When the light approaches a yellow color, the visual or fluoroscopic picture is usually better, but the radiographic effect poorer. A chlorid-accumulator storage-battery constituted the source of electricity, while the Ruhmkorff-coil has a spark of eight inches and the regulation spring-vinrator. The Crookes' tubes used are the three-electrode tubes devised by Professor Stein of the University of Chicago. The stand for supporting the tube, as well as all the wires employed, is insulated as perfectly as possible. The subject is placed in a position most favorable for either visual observation or exposure to a plate, as the case may be. The radiographic plate is placed in as close relations with the structures to be delineated as possible. The plate used is one that has been specially prepared for the purpose. The view was expressed that the best plate for the purpose has not been produced, and the suggestion was made that some fluorescent material might be embodied in the emulsion, that by its absorption of, or agitation by, the rays would greatly enhance the activity of the chemic changes in the silver-salts employed. The plates are kept light-proof by packing them separately, first in needle-paper, then in a black envelope, and finally in an outer sealed one of yellow post-office paper. The fluorescope is used to determine the effectiveness with which the tube is acting. In the preparation of skiagraphs it has been found that the more intimate the contact between the sensitized plates and bone, the shorter the exposure required, the less the distortion produced, and the sharper the definition of the resulting picture. On the other hand, the tube must not be held too close to the part to be reproduced, else the picture will be distorted and lack sharpness of definition, and the tissues of the subject may be burned, in degree and severity in accordance with the duration of the exposure and the amount of surface involved. Experience will soon teach the best point at which the tube shall be placed. The necessary exposure will be shorter (1) as the spark is larger, up to a certain point, probably about ten or twelve inches; (2) the more nearly the vacuum of the tube is at the point of exhaustion at which the coil employed will give off the greatest amount of X-rays; (3) the nearer the tube to the proper focal point; (4) the less the density and volume of the tissues in the part to be portrayed; (5) the more sensitive the plate. In printing from the plates, highly glazed papers will yield better results than will most surface-papers. More or less of the detail will be lost in the latter; yet for exhibition-purposes they are better, as the reflection of light from their surface is less, and they can be more readily demonstrated to large assemblies. Any of the good albumin or collodion papers of glossy surface may be used. Much of the beauty of a finished picture is due to the treatment of the plate, and to attain the best results one should first have served an apprenticeship with a practical photographer. While the exposure of a member is under ordinary circumstances unattended with any general disturbance, exposure of the chest is usually followed by acceleration of the action of the heart and alteration in the character of the beat.

DR. ARTHUR W. GOODSPEED called attention to a new and improved tube that he has been using successfully. This is smaller than the tube in common use, and has the quality of maintaining its exhaustion. To accomplish this latter object, some tubes are provided with a third electrode. The new tube referred to is coated with some fluorescent substance which seems to take up on its surface a certain amount of air set free by the action taking place within the tube. If the action is too great, the tendency to raise the exhaustion is counteracted by the setting-free of the gas spoken of; so that, to a certain degree, the exhaustion of the tube may be maintained. If, however, such a tube be worked too roughly—that is, at too high an electromotor-force—the exhaustion is likely to run down. This danger may be overcome by permitting the tube to rest awhile. Dr. Goodspeed has not been in the habit of holding the tube close to the body, and he has seen no bad effects upon the skin. This action may lend support to one of the several theories concerning the ultimate nature of the X-rays. One of these makes the X-rays of the nature of light of very short wave-lengths. Another considers the rays made up of material particles shot off from the exterior of the tube by the bombardment of particles within the tube, these passing through the fleshy material of the subject and producing their impress upon the plate.

MR. JOHN CARBUTT said a great deal of the success in skiagraphy depends upon the development of the plates. The plates from which most of the pictures exhibited were made, were treated with an emulsion containing a fluorescent substance, which causes absorption of the X-rays. Some of the earlier pictures made with ordinary plates were feeble because of the protracted exposure, as, for instance, for an hour or more. Good pictures can be secured in from four to seven seconds, although the average exposure for the hand is from two to three minutes, and correspondingly longer periods for thicker parts of the body. Cathodal rays of a greenish-yellow are best for observation with the fluoroscope, while rays of apple-green are best for photographic effect. With plates made especially for skiagraphic purposes, the development should be continued for from six to twenty minutes. By using celluloid films Mr. Carbutt has been able to make six good negatives simultaneously, showing that glass is less pervious to the rays than celluloid. He has under way experiments directed to the discovery of a silver haloid more sensitive to the X-rays than any at present in use. The longer the radiographic plate is exposed to the X-rays, the more dense the result on the margin, while an overexposure in the camera yields only a thin flat image.

In conclusion, DR. STERN spoke of the desirability of having a plate that could be used in emergency-cases when it is desired to secure a negative at once.

REVIEWS.

FUNCTIONAL DISORDERS OF THE NERVOUS SYSTEM IN WOMEN. By T. J. MCGILLICUDDY, A.M., M.D. Illustrated by forty-five wood engravings and two chromo-lithographic plates. New York: William Wood & Co., 1896.

WE can see, firstly, no reason for the writing of this book, and, secondly, none for its publication. All that it contains, except the reports of cases, has appeared over and over again in medical journals and in monographs and text-books on general, nervous, and gynecological diseases. The work is simply a collection of platitudes, so well-known as to require no elaboration, and the writing is without style, force, or diction. As for the various neuroses, they are quite fully considered, but it is impossible to find anything new, either in the way of theory or symptomatology.

The book-making is fair. The chromo-lithographs are poor, and most of the other illustrations convey no impression of what they are intended to represent.

INFANTILE MORTALITY DURING CHILDBIRTH, AND ITS PREVENTION. By A. BROTHERS, B.S., M.D. William Furness Jenks Prize Essay of the College of Physicians of Philadelphia. Philadelphia: P. Blakiston, Son & Co., 1896.

THIS essay is a critical *résumé* of the causes which threaten fetal life previous to birth, during labor, and during the first few hours of extra-uterine life. The author points out historically the changes that have taken place in the prophylaxis and treatment of these cases. The subject is treated in a lucid and logical manner, and although much of the work is a compilation, as it necessarily must be, the author has rendered a good service to the profession in collecting and arranging his material so admirably.

Statistics of infantile mortality are given, embracing those of the Board of Health of New York City, which show that, between the years 1889 and 1892, 16,000 deaths occurred in New York in newly born children or in children less than a month old. The author gives a study of forty-seven *post-mortem* examinations on newly born infants, and regrets that such examinations are not more commonly made when the opportunity is presented.

The "causes of infantile mortality" are next discussed, and are divided according as the blame must be placed upon the mother, the child, or the accoucheur. The divisions of "before labor," "during labor," and "after labor," are further made. The work concludes with a consideration of measures to prevent the unwilling destruction of fetal life, and a discussion of methods of resuscitation, in which a predilection is shown for Sylvester's method. The essayist has a flowing style, and has made a valuable contribution to the scientific books of the year in the well-printed one before us.

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ORIGINAL ARTICLES.

RELATION OF DISTURBANCES OF THE ALIMENTARY TRACT TO KIDNEY DISEASE.[1]

BY WILLIAM VISSMAN, A.B., M.D.,
LECTURER ON PATHOLOGY, BACTERIOLOGY, AND CLINICAL MICROSCOPY AT THE NEW YORK POLYCLINIC.

THE experiments of Bouchard show that intravenous injection at one time of a quantity of urea in excess of what would be excreted by an animal in several days, produces no alarming or serious effects. Furthermore, G. Klemperer recommends administration of urea to man as an excellent diuretic, while Bettman reports a number of cases in Erb's clinic, one patient having taken over 600 grams during the course of several days, without any deleterious effects. In fact, he states that the only unpleasant effect noted was a slight diarrhea in several cases. In the light of this testimony it may not be inopportune to look to other substances as the cause of the chain of symptoms which hitherto have been attributed to intoxication with products of animal metabolism when occurring in the course of renal affections.

It is customary to divide the diseases of the kidney into three classes, namely, those affecting the epithelial lining of the tubules, those expending their force upon the interstitial tissues, and, finally, those in which both the epithelial cells and interstitial tissues are affected at the same time. Clinically, these different forms may be, and often are, diagnosed with great accuracy; but anatomical experience has left the writer in much doubt as to there being a distinct line of demarcation between disease of the parenchyma and of the interstitial structures. However, there are innumerable cases where the great force of the anatomical disturbance is spent either on the parenchyma or the interstitial tissue, while the other remains *comparatively*, but not absolutely, unharmed, depending largely on circumstances.

In making a *post-mortem* examination, the similarity between the anatomical changes in the liver and spleen, and those in the kidney is very prominent, and close examination of the blood vessels throughout the body reveals in almost every organ the same type of lesion as is found in the kidney. Furthermore, careful examination of the bodies of patients who have succumbed to renal disease will usually show a very apparent lesion somewhere in the parenchyma of the alimentary tract, if not throughout its greater portion. These anatomical disturbances may vary within extreme limits. Naturally, the function of the organs will be interfered with in proportion to the gravity of these lesions, Patients suffer from disturbances of all sorts due to interference of excretion and secretion. To illustrate the grave symptoms which may be attributable to a very slight lesion in the alimentary tract, it is only necessary to refer to the records of any cholera epidemic in order to find that some of the apparently most healthy individuals of a community have become victims to this disease. When it is considered that cholera spirilla cannot withstand the normal secretion of a healthy stomach, it becomes very probable that these apparently healthy individuals really had some very slight disturbance of the stomach which interfered with its normal functions. Slight disturbances of digestion are very frequently due to causes to which every one is daily exposed, such as fatigue and indiscretion in diet, as partaking of too hot or too cold food and drinks, to say nothing of the chemical combinations of the ingredients of the drinks taken. The consequences of indiscretions of this character are many, depending altogether upon the substances ingested and the persistence with which the habit is continued.

It is naturally not supposed that one should partake of perfectly sterile food, but it is reasonable to expect that food known to contain pathogenic organisms will be rejected by every one. The nonpathogenic organisms, however, are not so absolutely harmless as they are generally supposed to be. No one could ascribe any ill effect to the ingestion of a delicious cupful of bouillon, yet how many could place the bouillon in what is ordinarily called a clean glass, allow it to stand until it becomes sour, and then drink it with impunity? Yet the same changes wrought by the bacteria in the bouillon in the glass may be, and are, produced in the alimentary canal when its physiological function is disturbed. Under this condition, this canal, with its absence of light, presence of moisture and warmth, and with its contents as a medium for the propagation of germs, is an ideal place for growth and proliferation of bacteria and the formation of the products of their metabolism. The effect on the organism of these products of bacterial metabolism differ according to the organism by which they are produced. They may cause certain well-defined diseases, such as diphtheria, cholera, etc., while others may act simply as sedatives or irritants. The effect on the alimentary canal of sedative or irritating products of bacterial metabolism are too well known to require further discussion at this point. The constitutional effect upon animals when these products of metabolism are administered hypodermically is variable, usually those common to infectious diseases; and when large doses are administered the animals die in convulsions. An excellent idea may be obtained by observing children suffering from so-called summer diarrhea. The children show all of the symptoms of uremia, from the mildest to the most severe, including coma and convulsions. Autopsies of these cases show that the little sufferers have a kidney lesion, generally nothing more serious than a cloudy swelling of the parenchyma. However, a thorough cleansing of the bowel, either by high enema or cathartic, has such a mitigating effect on the little victim's suffering as to give almost conclusive proof that the cause of the trouble was the absorption of something from the contents of the alimentary tract.

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[1] Read before the Medical Society of the County of New York, December 28, 1896.

Numerous bacteria which produce indol flourish in the intestine, and that the products of metabolism of these organisms enter the blood is evidenced by the voiding of indican with the urine of patients having disturbances of digestion. That the indican in the urine emanates from the alimentary tract is shown by the fact that if this canal is thoroughly cleansed, indican disappears from the urine. It is very probable that bacteria also enter the blood from the intestine and are voided with the urine, for Engel[1] in examining the urine of 31 cases of nephritis found bacteria in 29 cases. Among the bacteria found, the most frequent were pus producers, followed by colon, tubercle and typhoid bacilli in the order named. There are reasons for believing that other so-called non-pathogenic organisms also enter the circulation, because they have been found in the urine after the latter had been drawn with a catheter under aseptic precautions. Even though healthy blood serum has a certain power of disinfection, the work of Buchner, the writer, and others has shown that the dead bacteria possess the power of producing aseptic suppuration.

In 1878, Pasteur proved that sterilized (dead) pus-producing organisms, as well as live cultures, produced suppuration. Later, Grawitz, de Bary, *et al.*, proved the same in connection with staphylococcus pyogenes albus, bacillus prodigiosus, and bacillus pyocyaneus, and Buchner did the same for Friedländer's pneumococcus. Buchner[2] was not convinced that the effect produced by the sterilized cultures was not due to the product of metabolism of the organisms, and he therefore made extracts of the following organisms: Staphylococcus pyogenes aureus, cerius flavus, sarcina auranticus, bacillus prodigiosus, Fitzianus, cyanogenus, megaterium, romosus, subtilis, coli communis, acid lactici, anthracis, mallei, Kieler Wassor, proteus vulgaris, vibrio Finkler Prior., and produced an aseptic suppuration with these extracts also.

The writer[1] has found that if sterile cultures of tubercle bacilli were introduced into the ear vein of rabbits, hemorrhages into the renal glomeruli and interstitial tissue followed. Later, the walls of the blood vessels were markedly infiltrated with round cells, which infiltration also extended to the surrounding connective tissue. The same changes as were noted in the blood vessels and interstitial tissue of the kidney, were also noted in the liver and lungs, and later on, when other experiments were made in conjunction with injections of tuberculin, the same changes were noted, but the addition of the tuberculin treatment intensified the action to such a degree that the changes were very much more pronounced. The arteritis was such as to almost obliterate the lumen of the vessels. The tuberculin used was some of the first made and was, therefore, only a filtrate of a concentrated glycerin bouillon culture of tubercle bacilli. For other evidence that products of bacterial metabolism may, and do, produce nephritis, it is only necessary to examine the kidneys of a patient who has succumbed to an infectious disease. Here the character of inflammation will vary from the mildest (cloudy swelling) to the most serious changes. Fürbinger,[2] Roux and Yersin,[3] v. Kahlden,[4] Senator,[5] and others, proved that the toxins of diphtheria administered hypodermically were equally as effective in producing nephritis as the bacilli. A number of non-pathogenic organisms produce substances possessing virulent toxic properties, and these substances are at times produced in the alimentary canal and, when absorbed, produce marked changes in the kidney. These disease processess will vary in severity according to the nature of the toxin and the length of time the organ is exposed to it.

There are a great number of persons who suffer from slight derangements of the alimentary canal without being suspected of illness. They will give a history of going to stool, once, twice, or three times a day; others, once in two or three days, and almost every patient will say he has passed about a normal quantity, but upon being questioned closely he will inform the physician that he never felt completely relieved at any time. Examination will show that these patients are all voiding an abnormal urine which, when introduced under the skin of a lower animal, will be proved to contain irritating poisonous substances.

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[1] *Deutsch. arch. f. Klin. Med.*, Bd. 26.

[2] *Berlin Klin. Woch.*, No. 30, 1890.

[1] Verhandelungen der Berliner Mech. Gesell., Virchow's Archiv, Bd. 129, 1892.

[2] Virchow's Archiv., vol. xci.

[3] *Annal. de l'Inst. Pasteur*, 1888-89.

[4] Zeigler's "Beitrage z. Path. Anat.," Bd. ix.

[5] *Deutsch. Med. Woch.*, No. 33, 1895.

Most of the patients, also, excrete small quantities of a very highly concentrated and very acid urine, but others show just the reverse; and almost all the urines will be found to contain abnormal quantities of nitrogen compounds, to say nothing of other abnormal constituents, which may be found on chemical and microscopic examination. The probable cause of the sensation of not having completely relieved the lower bowel will be found to be that scybala are lodged in the canal and produce the disturbance, and that these scybala, aside from the disturbance caused merely by their action as foreign bodies, form an ideal nidus for the growth of bacteria and the production of toxins which, when absorbed and then voided in the urine, irritate the kidney, perhaps only very slightly, but when continued for years, as is the case with most persons following sedentary avocations, are very probably the true cause of the large number of kidney and blood vessel lesions among commercial and professional men.

DISCUSSION.

Dr. Satterthwaite remarked that there were a number of interesting relations between affections of the kidneys and those of the gastro-intestinal tract, which had recently come into prominence. He had been much interested in the case of a patient of his, who had come to him recently with a history of nausea, vomiting, and cramps, with dilatation of the stomach, due, it seemed, to pressure downward of a dislocated kidney on the head of the duodenum. There had been no pressure on the common duct. It was one of those rare cases in men that has been described of late years. He believed there was a small class of cases in which the normal contents of the intestines produced general infection of the spleen. In certain ones, he thought that experiments had shown that where the secretion of the pancreatic juice was diminished or prevented, decomposition of the intestinal contents would take place, and sometimes the functions of the kidneys would be seriously interfered with. This was in a measure corroborative of the position taken by Dr. Vissman, that in the sluggish indigestion of old people, the scybalous feces may give rise to renal troubles of an organic character. But to his mind the most interesting point in the discussion hinged on the casual relations between certain enteric diseases and nephritis. And in this connection he called attention to the fact that during the last year Dr. Seibert of this city appeared to have been the first in his locality to show that the enteritis of infants gives rise in some instances to acute nephritis. Judging from his personal knowledge in an institution with which he was connected, this association of diseases was not a frequent one, however; indeed, in half a dozen examinations in infantile enteritis, no implication of the kidneys was found. The difficulty in the way of determining this matter was a serious one. In infants under two years of age it was very difficult to obtain sufficient urine for examination without resorting to artificial means. In this connection he would remind the audience that neither albuminuria nor general edema, which were tolerably common in the enteric diseases of infants, was necessarily indicative of nephritis. Nothing less than a microscopic examination of the urine should be taken as an evidence of such disease.

In reference to the use of the term *auto-infection*, which had come up in the discussion, he objected to it, because it had come to be used as synonymous with a special bacterial invasion of the tissues, while in this instance, certainly, the kidneys were invaded by several if not many kinds of bacteria. And though the *bacillus coli commune*, whose habitat is in the mucus of the normal intestines, has been found in these cases in the kidneys, it had also been found at the same time in the lungs. As a matter of fact, when infection spreads from the inflamed bowels it is quite as apt to reach the lungs, perhaps the brain or meninges, as the kidneys, and it is quite possible that the kidneys may be infected from the bowels through the medium of one or other of these organs. Nor is there any proof that any of these microörganisms in any enteric disease is the cause of the nephritis, directly. There is but one law on the subject and that is Koch's law. The organism supposed to be specific must be found in the diseased tissues; it must be isolated and a pure culture made; finally, this pure culture when inoculated upon a susceptible animal, must produce the disease in question. Now, as in these cases it has not been shown that any given microörganism will answer this test, we must look for the virus either in some product of the bacteria or in some chemical substance apart from bacteria. He would, therefore, substitute for auto-infection the term endogenetic infection. This word is not a new one, but as used it is meant to indicate that the infection of the body proceeds from within the body, but is not necessarily associated with a given bacterial organism.

But there is also a more practical side to this matter. It is this: In treating enteric disturbances in general, we should as soon as practicable unload the gastro-intestinal tract, and then regulate the diet of the patient, so as to avoid the use of food that may decompose. Then we should also aim, if possible, to flood this same gastro-intestinal tract, so as to cleanse it frequently, thus reducing to a minimum the chance of endogenetic infection, using when available mild antiseptic solutions. Finally, we should select by preference those drugs which act as gastro-intestinal antiseptics, such, for example, as calomel and other salts of mercury. We know that they act favorably in kidney affections. His personal experience in the irrigation of the bowel in infantile enteritis with antiseptic solutions, had aided him in coming to these conclusions.

SOME HINTS AS TO THE TREATMENT OF "COLDS."

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ACUTE coryza is not only a universal malady, of which everyone has had some personal experience, but it is also a frequent object of medical advice. One is often consulted as to the best means of aborting this affection, as well as for methods of relieving the distressing symptoms which attend its course. Usually insignificant and temporary, acute coryza is not infrequently the first stage of a descending catarrh that ends in a long-continued and sometimes even dangerous bronchitis. In certain individuals—among whom the writer is so unfortunate as to be numbered—this tendency to invade the bronchial tubes is painfully constant and invariable. For these reasons, "a cold in the head" is not unworthy of careful attention on the part of the family physician; and a few therapeutic suggestions, gathered from various sources in the course of several years, may not prove unwelcome.

As regards prophylaxis, each individual is a law unto himself; he knows from personal experience his vulnerable point. With one it is the feet, with another the chest, sometimes the back of the neck, and again the scalp; many women are always liable to cold whenever they wash the hair. It is hardly necessary, therefore, to tell the individual what he must avoid; he knows.

There are, however, certain facts of common observation which may here be emphasized. In the first place, the general hardening process of the skin, so much practised by the European peoples, is unquestionably a prophylactic factor of the greatest utility. Exception being made of individuals of naturally weak constitution, the habit can hardly be too early acquired of a systematic gymnastic exercise of the superficial capillaries. In early childhood this may be begun by following the daily bath with a cold sponge effusion. Later, the whole bath may be cooler, and after the age of puberty, there is nothing better than the cold plunge or shower-bath of perhaps thirty to sixty seconds' duration. Of course, much depends on the surroundings and the exercise of common sense: the bathroom should neither be icy-cold nor so hot that the rubbing-off ends in an exhausting perspiration. My own plan is as follows: The room being at a temperature of about 60° or 65° F., two or three minutes are spent at the bowl in the toilet of the hands and face. During this time the naked body is exposed—beneficially, I think—to the slightly chilling atmosphere of the room. This is followed by a quick shower-bath of practically the temperature at which the water comes from the hydrant. A rather vigorous rub, continued only until the skin is dry, leaves the body warm and glowing. It is to this daily exposure that I attribute my comparative freedom from colds of late years.

Another fact of prophylactic interest is generally recognized: colds rarely follow exposure during exercise, or immediately after it. It is only after a certain degree of cooling has taken place that the danger begins. A cold plunge into the river immediately after a hard pull is the routine practice of our college crews, even late in the autumn months. In climbing the Kœnig's pass in the Tyrolese Alps, I have, with perfect impunity, made a complete change of underwear in the midst of a driving snowstorm; being overheated from exercise, I knew that a *brief* exposure would have no effect upon the superficial circulation. It is only after a certain time has elapsed (as indicated by the sensation of cooling off) that the possibility of taking cold begins. If exercise is resumed before there is any sensation of chilliness or drying, a cold will almost invariably be avoided.

When a coryza is threatened, or even already established, it may, if taken early, frequently be aborted. Measures to this end may be both general and local.

General Treatment.—The efficacy of quinin in certain cases can scarcely be doubted. As a rule, it must be taken within the first twelve hours, and to the quantity of at least 10 grains, in a single or divided doses. Unfortunately, the physiological effect of the drug is often hardly less disagreeable than the disease itself, and, moreover, its curative action is very uncertain. Personally, I rarely advise it. Other cases are favorably influenced by diaphoresis. Under favorable circumstances, as, for example, where the patient can remain on the following day at home, and especially where, in addition to the catarrhal symptoms, there is some little febrile movement and myalgia, the following common procedure may be advised: Ten grains each of Dover's powder and phenacetin are put into four capsules; two of these are given at once, and the patient remains for about ten minutes in a hot bath. He then takes a hot lemonade or rum punch and gets between several thicknesses of heated blankets. In half an hour the second two capsules are given, unless perspiration is already abundant. Such perspiration should continue for an hour, after which the skin is slowly dried, and the patient retires for the night to a comfortable bed.

But it is not often that such circumstantial treatment of a simple coryza is necessary, or even desirable. For people who are compelled to be up and about, or who, perhaps, have some urgent engagement for the evening, there are two remedies, either of which offers a very considerable prospect of quick relief. The first is the tincture of euphrasia officinalis; ten drops of this every ten or fifteen minutes for two or three hours will sometimes almost completely dissipate the headache and the uncomfortable sensation of stuffiness and frontal pressure so characteristic of acute nasal catarrh. A second, and perhaps more valuable—certainly more tested—remedy is gelsemium sempervirens. The action of this drug upon the first and second branches of the trigeminus is well known; and it is probably through its effect upon the nasal branches of the ophthalmic nerve and of the ganglion of Meckel that it exercises an abortive influence in this affect on. It may be given at the outset as a single dose of 20 drops of the tincture, or the same quantity may be added to half a tumbler of water, and of this a teaspoonful be taken every ten minutes for two or three hours, or until diaphoresis results.

Later, when the coryza has progressed to the stage of abundant discharge, the only internal remedy that I have found of any service is atropin, in doses of $\frac{1}{16}$ of a grain, once or twice daily. In some people, this produces so much dryness of the throat, or mydriasis, that it has to be discontinued; in others, however, it causes an agreeable diminution in the quantity of the discharge.

Local applications, chiefly in the form of inhalations, are more popular, more convenient, and, perhaps, on the whole, more useful than any of the remedies hitherto mentioned. An old and familiar combination is the following:

℞	Acidi carbolici, ...	ʒ i
	Spts. vini. rect., ...	ʒ iii
	Liq. ammon. caust., ...	ʒ i
	Aq. dist., ...	ʒ ii

M. Sig. For frequent inhalation.

This mixture will undoubtedly afford considerable relief, but it is hardly to be compared in general efficiency with others given below.

During the first two or three days of a coryza the most useful of all the preparations I have employed is a snuff, the principal ingredients of which are cocain and menthol:

℞	Cocain hydrochlor., ...	gr. iiss
	Menthol, ...	gr. iv
	Acidi borici, ...	ʒ ss
	Pulv. coffeæ, ...	gr. viii

M. Sig. Snuff (Coupard).

Of this, a small pinch is directed to be taken in each nostril every two or three hours. It gives great temporary relief, and I am frequently asked to have the prescription repeated. This snuff may also be used with benefit after there is an abundant catarrhal secretion. It may, with advantage, be combined with the internal use of gelsemium, or, later, with atropin.

Another good method for the local use of menthol has recently been strongly urged by R. Wünsche (*Ther. Monatsehfte*, 1895, No. 9). He prescribes the following:

℞	Menthol, ...	ʒ ss
	Chloroformi, ...	ʒ v

M. Sig. Inhalation.

At the first indication of coryza—such as sneezing and frontal discomfort—4 or 5 drops of the above mixture are quickly rubbed over the palms of the hands, the latter held like a cone over the nose and mouth, and a few deep inhalations are taken. It is claimed that all tendency to sneeze at once ceases, and the coryza is almost invariably aborted. For additional surety, it is recommended that the inhalation be repeated two or three times in the course of the following day. Wünsche has also found that these inhalations are a good prophylacticum against influenza, and calls attention to the experiments of Rönicke, which seemed to demonstrate the marked germicidal action of menthol fumes. The great benefit to be derived from menthol in various affections of the upper air passages, as appears from the many recommendations which have come from different sources, certainly warrants an extended trial of this remedy in acute coryza.

Camphor is another drug that has for a long time borne the well-deserved reputation of being serviceable in this disease. At Bamberger's clinic, in Vienna, the routine treatment of the first stage of coryza is this snuff:

℞	Camphor trit., Sacch. alb.,	aa . . . . ʒ ii

M. Sig. A small pinch in each nostril every two hours.

I have also used the following method with advantage, although, on the whole, the snuff is to be preferred: The patient is directed to put an ounce of powdered camphor in a shaving-mug and to fill with boiling water; a cone of stiff paper is then arranged so as to fit over the mug and to cover the face, and the fumes are thus inhaled for twenty minutes every two or three hours. Here, again, the fault of the method lies in the fact that it is too troublesome; for a simple "cold" people demand a simple remedy, and anything else is regarded with disfavor from the start.

During the stage of exudation, it is my personal belief that local treatment is of little benefit. If a remedy is desired, I know of nothing better, and at the same time simpler, than a snuff of alum, 1 part to 10 of powdered sugar or boric acid.

In closing this brief *résumé*, I wish to disclaim any originality whatever in the suggestions offered. My object has been simply to state a few useful empiricisms which, in the course of years, have been blown in upon me by the four winds.

BOVINE TUBERCULOSIS AS A FACTOR IN THE PRODUCTION OF HUMAN TUBERCULOSIS, THROUGH THE USE OF MEAT AND MILK.[1]

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TUBERCULOSIS causes about fourteen per cent. of all deaths—or more than smallpox, diphtheria, scarlatina, typhoid fever, typhus fever, yellow fever, cerebro-spinal fever, Asiatic cholera, relapsing fever, leprosy, measles, and whooping cough, combined. The extremely high death-rate from tuberculosis should call forth all our dormant energies to prevent its spread, and to arrest its further progress as far as possible. Preventive measures are of especial importance because of the insidious onset of the disease, and its relatively slow progress when once established; because it causes such prolonged suffering, entails such great expense to those afflicted with it, and is so readily transmitted from the sick to the well.

The bacillus tuberculosis is now considered by all the best authorities to be the real and active cause of the disease, yet they all agree that the environment and the vital resistance of the body are important factors in facilitating or retarding its propagation. There can be no doubt that the nature of the soil and the condition of the biologic functions of our bodies will influence the results when the germs of tuberculosis succeed in gaining an entrance. On the other hand, there can also be no doubt that it is impossible to produce the disease in human or animal bodies without sowing its specific germ in such bodies, regardless of what the nature of the environment may be, or of the extent to which the vital resistance of the body has been reduced.

There is no longer any dispute as to the identity of the disease as it occurs in man and the domestic animals—only excluding fowls. We have abundant experimental evidence that the disease is readily communicated from man to the lower animals, and that the lesions produced are identical with those observed in man. There is a difference of opinion as to the extent to which tuberculosis prevails among the domestic animals. It has been estimated that from five to fifteen per cent. of milch cows are tuberculous. The prevalence of the disease among cattle varies greatly in different sections, being more common in those sections in which the cattle are confined in close stables during the greater portion of the year.

The possibility of the transmission of tuberculosis from the lower animals to man has long been recognized. The danger of contracting the disease through the consumption of the milk and meat of tuberculous cattle has been known to the scientific world for more than a hundred years. The extent of the danger is to-day the principal controversial point. It is frequently contended by those who pretend to assume a conservative position that we lack sufficient positive data, experimental and physiological, to warrant us in formulating definite conclusions on the subject. Happily, however, recent literature on the subject abounds in data accumulated by a host of scientific observers, whose competency is unquestioned, that shows the danger of infection through tuberculous meat and milk is very great.

As the result of clinical observation, a number of observers report instances of infection through the alimentary tract in animals by mixing tuberculous sputum with the food. Reissmann[1] quotes Jacobs, Devillers, Lengler, Durieux, Demme, Bollinger, Lamallerée, Nocard, Johne, Peters, Morro, Zschokke, and Eberlein, who report instances of infection in this manner in heifers, cats, dogs, hens and parrots, as the result of taking human tuberculous sputum with the food. He also quotes Klebs, Goring, Zippelius, Lehuert, Kloss, Böttcher, Woodhead, Utz, Demme, Uffelman, Felizel, Martin, Ebstein, Hergard, Johne, Prümers, Gosse, Sonntag, McFadyean and Woodhead, Bang, and Lucas, who report instances of infection in heifers, calves and pigs, from milk, and also of swine feeding on the meat of highly tuberculous heifers. Kolb also reports cases of three pigs fed on raw tuberculous meat, which showed tubercular infection of the alimentary tract. Schmidt observed a number of cases of infection in chickens, especially of the liver, that had been fed on raw meat from a highly tuberculous ox.

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[1] Read before the Montgomery County Medical Society, Norristown, Pa., December 16, 1896.

[1] Reissmann, *Hygienische Rundschau*. Berlin, 1896, No. 18, 19, 20 and 21.

Reissmann states that the presence of tubercle bacilli in the walls of the blood-vessels, in the lumen of the vessels, and in thrombi, as well as in the vicinity of the vessels, has been demonstrated in a number of cases of advanced tuberculosis in cattle by Fütterer, and that Rütimeyer found bacilli in the blood of a case of acute general tuberculosis, and in another case in the spleen. Sticker, in two cases, and Ulacocis, in one case, of generalized human tuberculosis, found bacilli in the blood taken from the tip of the finger. Meisels, and Lustig, also found bacilli in the blood, and Heller reports a similar instance. Weigert, Nasse, Herxheimer and Bergkammer found bacilli in the blood and lymph of cases of generalized and miliary tuberculosis. Confirmatory reports have also been made by Hanan, Hagemann, Bang, Sticker, Sacerdoti, Cantoni, Ehrlich, Guttmann and others, indicating that there is danger of infection from meat of tuberculous cattle even in the absence of lesions in those parts.

The report of the Royal Commission on Tuberculosis[1] is the most important communication on this subject of recent date. This report is based on—(1) the experiments of Dr. Sidney Martin, who fed pigs, guinea-pigs and rabbits on meat and milk derived from tuberculous animals, though all tubercular lesions had been first removed. Of the animals thus fed, 36 per cent. (5 out of 14) of the pigs became tuberculous; of the guinea-pigs, 16 per cent. (24 out of 145), and of the rabbits, 15 per cent. (2 out of 13). He also fed one pig, 8 guinea-pigs and 10 calves with material containing tubercular matter, each animal receiving only a single dose. Of these animals, the pig, 6 guinea-pigs and 8 calves became tuberculous. (2) The experiments of Dr. Sims Woodhead, who fed 7 pigs, 5 cats and 76 guinea-pigs on tuberculous matter, and all the pigs and cats and 50 of the guinea-pigs became tuberculous. Both of these investigators found that the milk of tuberculous cows contained bacilli only when the udder was also diseased, and was only then capable of conveying the disease to the animals fed upon the milk, or inoculated with it. When the udder was diseased the milk possessed a most extraordinary virulence. They report that the udder may be affected in the early stage of the disease, and when diseased the process spreads with great rapidity. At times the udder may also be diseased without presenting any definite signs in the earlier stages, thus making it very dangerous to use the milk. Both Dr. Martin and Dr. Woodhead insist that no tuberculous animal of any kind should be allowed to remain in a dairy.

Dr. Woodhead experimented in roasting and boiling meat smeared with tuberculous matter. He found that rolls of such meat of over three or four pounds in weight, were not sterilized by the ordinary methods of cooking. He also experimented with tuberculous milk heated to 80° C. (176° F.) for ten minutes, and found that guinea-pigs fed on such milk become tuberculous.

As the result of his experiments, Dr. Martin was especially impressed with the danger of infecting the entire carcass of an animal in removing the diseased organs from it. Manifestly this danger is least in those cases in which the disease is distinctly localized in a single organ, but the danger is greatly increased when the disease is more generalized. He says that "one is driven to the conclusion that when meat is infective it commonly acquires its properties by being accidentally contaminated with tuberculous material during its removal from the carcass. This conclusion, it is evident, is one of great practical importance, bearing directly on the question of the condemnation of the meat of tuberculous cattle for human consumption. And it is evident, also, that the infective properties of meat might vary with different series of experiments; . . . the result depends on the care taken in guarding against contamination more than on anything else."

Dr. E. C. Schroeder[1] reports several series of experiments with milk for the detection of tuberculosis. In the first series the abdominal cavity of guinea-pigs was injected with nineteen samples of milk from different dealers or dairies, only one of the samples proving to be tuberculous. In the second series of experiments the abdominal cavity of guinea-pigs was injected with twelve samples of milk taken from cows that were known to be tuberculous, only one of the animals succumbing to the disease.

Dr. E. O. Shakspeare,[2] in speaking of tuberculosis in relation to infectious milk, says that "since tuberculosis of the human race has become better known, it has been found that in infants and young children, in some large cities, the mortality from some form of tuberculosis is far greater than has been generally believed, amounting, in some localities, to one-fifth of the deaths of the young. A significant fact in this connection is that it is most frequently some part of the digestive passages that becomes first affected in children."

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[1] Report of the Royal Commission on Tuberculosis, London, 1895.

[1] Schroeder, U. S. Department of Agriculture, Bureau of Animal Industry, Bulletin No. 7. Washington, D. C., 1894.

[2] Shakspeare, Public Health Circulars issued by the Philadelphia, Pa., Board of Health, No. 11. Philadelphia, Pa., 1893.

Dr. Irving A. Watson[1] cites the following observers on the question of transmission of tuberculosis through the milk of tuberculous cows: "Leonhardt reports the case of a healthy infant, of healthy parents, which was weaned and put on cow's milk. The child soon died of tuberculosis of the meninges, intestines, and mesenteric glands. The cow which gave the milk was found to be tuberculous. Another child fed on the milk of the same cow died, at about the same time, from tubercular meningitis. Sonntag reports the case of a six-months' infant, of healthy parents, which at autopsy showed miliary tuberculosis of the meninges. It was fed with milk from a tuberculous cow. Hermsdorf gives three cases in which there was extensive intestinal tuberculosis, besides less general affection of other organs. One had taken uncooked milk from a tuberculous cow. Demme reports the case of a four-months' infant, which at autopsy showed tuberculosis of the mesenteric glands. There was no tuberculosis in the family for two generations on either side. The milk came from a cow with general tuberculosis. Bollinger cites Stangs' case of a boy of five years who sickened with ascites and enlarged glands in the abdomen. At autopsy the chief lesion was tuberculosis of the abdominal lymphatics, but there was also tuberculosis of the serous membranes and of the lungs. There was no tuberculosis in the family for two generations. The child had for years been in the habit of drinking milk warm from a cow, which, growing thin before the boy died, was killed, and found to be tuberculous."

Dr. L. Emmett Holt[2] reports on 1045 consecutive autopsies from the records of the N. Y. Infant Asylum and the Babies' Hospital—ten per cent. of which were found to be tuberculous. In the latter, which receives only sick children, the percentage was the higher. Of 143 children, fifty-seven were less than one year, thirty-nine, between one and two years, thirty-two, between two and five years, and only fifteen over five years of age.

It is unnecessary to further multiply the citations of the results from the experimental investigation of the question under discussion, or the results of clinical and pathological observations as to the direct transmission of the disease through the use of tuberculous meat and milk. It should be evident to every one open to conviction that there is positive danger in the use of such products.

The phase of the subject which gives rise to differences of opinion to-day, among medical men as well as the laity, is not whether the meat and milk of tuberculous cows are dangerous, but at what stage of the disease do they become dangerous. It is evident, from the results of experiments upon animals, that in the earlier stages, while the disease process is still localized in a single organ, that the meat of such animals is not very dangerous; it is claimed by some to be innocuous. It is also evident, that as long as the udder of a cow is not involved, the large majority of cows do not yield tuberculous milk. The varied opinions demonstrate, to a great extent at least, the differences in the laws and customs, in different countries, with regard to the use of the meat and milk of animals suffering from localized tuberculosis. This difference is only in part explainable on these grounds. A further cause of the differences in these laws is also due to the fact that in some of these countries the laws have not been brought up to the level of our present-day knowledge of the subject.

In the several German States the laws vary to a considerable extent. As a rule, the meat is condemned when there is fever, when the animal is emaciated, when the disease has become generalized, and when there are nodules present. In France, Italy, Belgium and Denmark the same general law also applies, and when the disease is localized, and the diseased portion is easily removable, the meat may be used. In Saxony and Mecklenburg the diseased meat must be divided into small pieces and sterilized at 100° C. for half an hour before it is sold as food. In Saxony, Bavaria, and Italy such meat can only be exposed for sale when distinctly marked with a declaration that it came from a tuberculous animal, while in Denmark it is sold as second-class meat.

In searching the literature of the subject for expression of opinions by eminent scientists on the question of the use of the meat and milk of tuberculous cows, I find that Drs. Martin and Woodhead, already quoted, are of the opinion that all diseased animals should be killed and the meat condemned. Dr. Deshayes[1] says that "all animals infected with tuberculosis, even localized, should be unalterably rejected for human consumption."

Dr. Theobald Smith[2] coincides with Nocard, whom he quotes, in saying that all highly tuberculous animals should be condemned. Those having the disease in its incipient stage should be quarantined, fattened, and then sold only to the butcher. If they are found to be but slightly diseased, the meat may be exposed for sale after removal of the diseased portions.

Frequent visits to the abattoir of Philadelphia convince me that the meat of cows with localized tuberculosis is allowed to be sold. When the disease is somewhat generalized, I am informed, the inspectors condemn the carcass, and it is converted into fertilizer. Many writers claim that it is merely a matter of sentiment whether we condemn the meat of animals in which the disease is localized. To me it is a matter of the greatest vital importance. When we consider the markedly lower mortality from tuberculosis among the Jews, it is evident that their greater immunity from tuberculosis must be traceable to their well-known rigid meat inspection alone, because, as a rule, they do not live under the most favorable hygienic conditions. They discard the entire carcass of every animal that shows signs of disease of the organs of the great body cavities. Such meat is then sold to ordinary consumers.

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[1] Watson, New Hampshire State Board of Health Report, 1892.

[2] Holt, MEDICAL NEWS, December 12, 1896, p. 656.

[1] Deshayes, *Revue de Hygiene*. December, 1893, p. 1074.

[2] Smith, Bureau of Animal Industry, Bulletin No. 7. Washington, D. C., 1894.

To guard against the dangers of infection through the use of tuberculous meat and milk, we should urge the necessity of the thorough inspection of all cows kept for breeding purposes, or whose milk is offered for general consumption. All animals intended for use as meat should also be inspected, and those showing a trace of the disease should be condemned as unfit for consumption. The most reliable and ready method known to us to-day, by means of which we can detect the disease even in the incipient stage, is the tuberculin test. This test is now employed in many States and in many of the foreign countries, and, if the tuberculin has been prepared by competent bacteriologists, it is without detrimental effects on healthy animals.

In the absence of positive knowledge as to the healthfulness of cattle whose meat and milk is intended for human food, it is of the utmost importance that all milk be heated to 180° F. for five minutes before it is used, and that our meat be thoroughly cooked in order to avoid the danger of infection through its use.

AN ADDRESS.

THE COUNTRY DOCTOR.[1]

BY FREDERICK HOLME WIGGIN, M.D.,
OF NEW YORK;
VISITING GYNECOLOGIST TO THE NEW YORK CITY HOSPITAL, BLACKWELL'S ISLAND.

AS occasional introspection into individual life has an acknowleged value, it may be of practical benefit to turn our attention for a time to the consideration of a few points in the daily life of the learned profession to which we have the honor to belong. Therefore, I propose briefly to touch on some points of country medical life, and later to call attention to what I believe to be the needs of this Association to further its development and to bring it to the highest state of efficiency of which it is capable.

It is frequently thought by the country physician that all the professional advantage lies with his city brother; that he alone has opportunities for gaining a fair support from his professional labors, of increasing his store of knowledge, and of adding to the general professional welfare. To one acquainted with the environment of the city physician, and the many difficulties which beset him, which can be overcome in most instances only by years of arduous work before even his living is assured, this feeling is hard to understand, and to such an observer a prosperous village or small town seems a more attractive place in which to pursue the practical work of the physician; for, here are no dispensaries or hospitals casting, when abused, their baleful influence over the community and the profession under the guise of charity; here the public is more or less willing to share the burden of caring for the destitute with the physician; here he is able to support himself from the beginning of his professional career, can acquire a pleasant home early in life, and can bring up his family in the country, whence, as President Eliot, of Harvard College, has pointed out, the best students come.

With the large and varied experience which most country physicians have, opportunities for making reputation occur earlier and more frequently out of the city than in it. In the country fees are more certain to be collected, and the country physician's relations to his patients and the community are pleasanter, closer, and more important than they are in a large city. If, on the other hand, country practice involves greater physical exposure and fatigue, the practitioner is spared much of the mental anxiety and financial care of his city brother; and finally, if it is objected that the fees which dwellers in rural districts are able to pay are much smaller than those obtained by city physicians, it may be answered that the personal needs and the general expense of living are less in the country than in the city, while it is a fact that the income of the average city physician is not relatively, or actually, greater than is that received by the average country physician.

As a more intimate acquaintance with country medical life is obtained, one finds less difficulty in understanding why, in the midst of so much that is desirable, the mind of the average country physician is despondent. It is found that here, as elsewhere, the profession has been engaged for many years in educating the public and themselves to believe that medical professional services have little or no pecuniary worth. If the fee table of the local medical society is consulted, the maximum rate of fees seems satisfactory and capable of returning a good income to an industrious physician, and the fees also seem well within the means of the more prosperous members of the community; but a question elicits the answer that charges are based not upon this scale, but upon the minimum rate, which therefore becomes the standard, and which is often shaded, even for the well-to-do. Consequently services and experience are sold for and believed to be worth only a fraction of their value, and frequently for less than a livery-stable keeper would value the services of a horse for the same time and distance. As a result of this supposed necessity of either meeting competition or retaining personal popularity, the financial results are out of proportion to the efforts expended, and are inadequate. So the physician frequently adds commercial ventures to his professional duties, which, proving lucrative, soon become the vocation, and medicine the avocation. Losses incurred in performing professional duties at ruinous prices are made up on sales of drugs, general merchandise, or farm products. Time which ought to be given up to self-improvement or in resting body and mind is taken up with these outside pursuits, vacations are seldom indulged in, meetings of medical men are gradually neglected, and less and less thought or care is given to the general professional welfare, causing possibly a still further reduction in the fees demanded. Again, accounts are carelessly kept, bills are rendered only at long intervals, and the patient, taking this as an evidence of the physician's prosperity, procrastinates about settling his account. But the worst result of this system of small fees is the gradual deterioration in the quality of the physician's services, who, instead of doing the best work of which he is capable, becomes satisfied to render the poorest, as being all that the patient has paid for. The patient is frequently allowed to make the diagnosis, and under this method the writer has known good men to be credited with serious errors of diagnosis. He has known a case of imperforate hymen, with enlarged uterus and a projecting vaginal tumor, caused by retained menstrual fluid, diagnosticated as a case of amenorrhea, and the patient advised that Nature must take its course, which advice was certainly not worth the 50-cent fee paid for it; of a patient with a large carcinomatous testicle, which weighed over two pounds after its removal, having been told that he was demented when he stated his case. No examination was made, and the patient was dismissed after paying his fee, with the admonition that "some people are always imagining that they have trouble with their privates." The patient then called on the writer, who, after a careful examination, diagnosticated the case and advised operation, which was consented to, and a larger fee demanded, which was cheerfully paid. The writer has known of a case of empyema, occurring in a child of four years, considered and treated as one of worms, because the child stated that his pain was in the region of his navel; and as the 50-cent fee was not supposed to include a physical examination, none was made. He has also known of pleurisy with effusion diagnosticated and treated as influenza because the patient suggested this diagnosis.

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[1] President's address delivered before the Litchfield County, Conn., Medical Association at the annual meeting held at Litchfield, October 8, 1895; also read by request at the meeting of the Conn. Medical Society at New Haven, May 28, 1896.

Aseptic surgical technic is often made light of as being too expensive for country work. One extreme case treated on these lines, which came under the writer's notice, was that of a patient who had received an injury which crushed one of his fingers. This was amputated with an ordinary pocket-knife, the operation being naturally followed by septic infection, and this, in turn, by amputation of the patient's arm. The final outcome was the death of both the patient and the physician, who had inoculated himself in the careless handling of the wound.

Such experiences, which were common when the writer began his professional career in this locality, some years since, have happily ceased. The ordinary result of working under such a system as has been alluded to, is that after some years of active work and physical hardship, a complete breakdown occurs of mind, body, and, unless wealth has been acquired by some other means, of estate as well. On the other hand, it was found by the writer that an attempt to render a more careful, and therefore better professional service, was promptly met by willingness on the part of the community to pay more liberally, when the reason for the increased charge was explained. The result of this was that after a few years the income derived from professional work alone was nearly double that received by the writer's predecessor in the same field after twenty-five years of toil. The benefit was certainly not wholly confined to the writer, but extended to all who practised in the neighborhood, and to those who succeeded to the work. If it were possible, without being ungenerous or oppressive, to educate the public to a willingness to pay for a service what it was fairly worth in one locality, it can be done elsewhere.

People are beginning to realize that the country doctor must be a better physician than the city doctor. In the course of a recent editorial in one of the medical journals it was stated that, "Country practice, strange as it may appear, demands a higher grade of professional attainments at the start than those by which a young man makes an ordinary success in the city. The country physician is a marked man from the beginning, is generally known by every one in his town, and must necessarily, at the very outset of his career, set the pace for the remainder of his life."

Be practitioners of medicine only. Bend all your energies to the care of your patients and to self-improvement. Make your patients realize that you are abreast of the times and doing only the best professional work of which you are capable. Attend and take part in the meetings of medical societies. Go from time to time to the city, and see what others are doing, and get out, as Dr. W. H. Thomson aptly puts it, "a new edition of yourself." Take a yearly vacation for bodily and mental recreation, and you will find that your patients will not object to paying a higher fee for your services when you demand it. Give more thought to the general professional welfare, bearing in mind that if one would elevate himself he must elevate the profession to which he belongs.

There are, of course, various ways in which this may be accomplished, but the most practicable for most of us is by having personal pride in the reputation of the local medical association, and by taking an active part in its work. A serious effort should be made to attend all the meetings. Records of cases should be kept, so that written histories of those of interest can be presented at the meetings for consideration and discussion. It is a common experience for a presiding officer, after asking members if they have not cases of interest to report, and meeting with a negative reply, to hear the same members, after the close of the meeting, recount various experiences of general interest. Each member should be required in turn to write and read a short paper, the chief points of which should be furnished to some of the other members prior to the meeting, so that they can prepare themselves for its discussion.

When a member is honored by an election as a delegate to a local, state, or national association, he should consider it his duty to attend the meeting. Owing largely to the failure of members appointed fellows of the State Society to attend the meetings, this Society has lost much of its prestige, and has of late years exerted little influence on the general professional welfare. Official position should be considered one of honor and trust, and every effort should be made to perform the various prescribed duties by those chosen to fill them. Quarterly meetings should be held regularly in different towns of the county, so that all members may each year have an opportunity of attending a meeting of the Association convenient to their own homes. If the best work of which this Society is capable is to be obtained the annual dues should be increased sufficiently to permit of the employment of a stenographer, to attend the meetings and report the proceedings. Arrangements could then be made with a medical journal to publish them. It is hard to get men to do their best literary work unless opportunity is afforded to record it. I believe that more effort should be made to develop the social side of these meetings, and the annual dues should admit of the general entertainment being paid for out of the Society's treasury. Were these suggestions carried out there would be little difficulty in maintaining full attendance at the meetings. These days would come to be looked upon as pleasant and profitable; days for consultation, self-improvement, and social enjoyment; and, in time, the Society would become a model for others to follow, whether of city or state.

A society is what its members and officers make it, and nothing more; and to make it prosperous and influential all must join hands, each doing his duty. Individually, you would soon realize the benefit. You would find your interest constantly growing in scientific medicine as you studied systematically in the preparation for the writing of papers or for the purpose of taking part in their discussion, and this would be followed, as the members of the community realized that their doctor was up-to-date, by their increased respect and a willingness to pay more generously for his services. People take us largely at our own valuation. Remember that much original work has been done by country physicians, and that by reason of such efforts great advance has been made all along the line of medical work. Jenner, the discoverer of the protective influence of vaccination; Ephraim McDowell, who in 1809 performed the first successful ovariotomy of which we have record; Joseph Glover, of South Carolina, who in 1813 first successfully performed the operation of hysterectomy; Marion Sims, the father of gynecology, who perfected the technic of his operation for the closure of vesicovaginal fistula in the negro cabins of the South; Nathan Smith, of New Haven, who was the first to successfully perform an amputation through the knee-joint, and who, without knowing of McDowell's work, successfully performed an ovariotomy in 1821, advancing the technic of the operation by returning the stump into the peritoneal cavity; and Cogswell, of Hartford, who first succeeded in ligating the common carotid artery, were provincial physicians who became world-renowned.

Of McDowell's work, Dr. Dennis has said, in his essay on "The Achievements of American Surgery": "Few men can realize the influence of McDowell's first ovariotomy upon the whole field of abdominal surgery. It is indeed a sublime thought to consider that a man was found with the courage of his convictions to do what no man had ever done, and to operate within the noise of an infuriated mob beneath his windows. This mob would have lynched him if Mrs. Crawford had died. Having escaped the angry mob, he was pointed out as a murderer by his colleagues, and was also condemned by the highest scientific authorities in Europe. In America, therefore, under such circumstances, and under such conditions, the birth of the greatest operation in surgery occurred, an operation destined to save in the future millions of human lives." The *Medico-Chirurgical Review*, speaking of McDowell's achievement, said: "A back settlement of America, Kentucky, has beaten the mother-country, nay, Europe itself, with all the boasted surgeons thereof, in the fearful and formidable operation of gastrotomy with extraction of diseased ovaries."

Finally, Dr. Joseph Eastman of Indianapolis, in responding recently to the toast, "Ephraim McDowell," said: "Kentucky is justly proud of her statesmen, of her orators, and her soldiers, but shall not the achievements of her statesmen succumb at last to the pitiless logic of events? Shall not the voice of her orators grow fainter with coming ages? Shall not the victories of her soldiers be found at last only in the libraries of students of military campaigns, while the fame of this village surgeon, like the ever-widening waves of the inviolate sea, shall be wafted to the utmost shores of time, hailed alike by all nations, in all ages, for having lessened the burden and prolonged the span of human life?"

CLINICAL MEMORANDUM.

CATARACT EXTRACTION FOLLOWED BY COMPLETE ATROPHY OF THE IRIS; PRIMARY SARCOMA OF THE IRIS.[1]

By FRANK H. EDSALL, M.D.,
OF PITTSBURG, PA.;
OPHTHALMOLOGIST TO ST. FRANCIS HOSPITAL, AND TO THE PITTSBURG HOSPITAL FOR CHILDREN.

THE two cases, reports of which follow, are, I think, sufficiently unusual to make them of interest as curiosities.

CASE I.—Mr. H., a glass-worker in one of the neighboring towns, came under my charge in June, 1895. He was at that time about twenty-four years of age, in vigorous health, and with no personal or family history which would in any way shed light upon the causation of the trouble for which he consulted me—complete opacity of the lens of the right eye. He had first noticed trouble with this eye some three or four months before I saw him, which trouble, then as now, had been limited to defect in the vision of the eye. It had progressed steadily up to the point which it had reached at the time he came under my charge. There was absolutely no history of injury, nor of inflammatory disease of the eye within the patient's memory, the only thing which had attracted his attention having been the increasing dimness of vision and the white spot in the pupillary space. He was annoyed by this disfigurement, and it was more for the purpose of being freed from it for cosmetic purposes than for possible improvement in vision that he consulted me with regard to its removal.

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[1] Read before the Pittsburg Academy of Medicine.

The eye was carefully examined, but nothing beyond the complete white opacity of the lens could be determined. There was no inflammatory trouble, no defect in light projection, no increase in tension, no scars nor marks of any kind. The left eye was in every way normal beyond the presence of a moderate hypermetropia. After explaining to the patient the possibilities and limitations of results from operation, and being urged by him to operate for cosmetic purposes, I consented to do so. He was accordingly sent to St. Francis' Hospital, and a needle operation was undertaken. No symptoms of any moment were observed subsequent to the operation, and the patient was allowed to return home in a few days. At the end of about two months, absorption being incomplete, I repeated the needling, this time at my office. As before, there were no unfavorable symptoms following the operation, and further absorption took place as a result of this interference, but the process stopped short of entire disappearance of the cataract, and a third operation became necessary. This was undertaken about six weeks after the second, and, like it, was done in my office. No undue traction was made upon the zonula in either operation, and in the last, as in the others, no accident or complication occurred. For several days following, the case behaved very much as it did subsequent to the previous operations, except that there was some increase in the redness and injection of the ocular conjunctiva, which injection was rather more persistent than before. On the sixth day following the operation the patient complained of considerable pain in the eye. The eye was, at this time, noticeably though not violently injected; there had been some further absorption of the lens, and a few small flakes of lens-substance could be noticed in the anterior chamber. The aqueous humor was slightly turbid. The usual treatment for a mild iritis seemed all that was indicated in the case at this time, as the inflammatory symptoms were not violent and the eye was already under the influence of atropin. The pain lasted but a few days and the other symptoms of inflammation became gradually less marked, but did not wholly disappear for several months. In about two weeks from the date of this visit, the color of the unabsorbed lens-substance changed from clear white to a straw-yellow, and the iris had become infiltrated with a muddy-yellow lymph. From this time on there was a steady atrophic change in the iris. The exact date of the commencement of the absorption of the iris I am unable to state, as the patient about this time passed from my observation for some weeks. When I next saw him, however, absorption had occurred in a portion of the upper nasal quadrant of the iris. This atrophic portion steadily widened until in the course of some two months it had included the entire circumference of the structure excepting a small segment in the lower temporal quadrant. At this point a slight adhesion had formed between the pupillary border of the iris and the capsule of the lens, and here, whether in any way due to these adhesions or not I do not know, the iris has failed to atrophy, and is, to all appearances, still normal, while elsewhere it has completely disappeared. The vitreous chamber is at the present time filled with what appears to be a mass of organized lymph. No pus formed at any time in the course of the trouble, nor, as I have said, was there at any time any severe pain.

The retrograde process which occurred I believe to have been due to a cyclitis, though differing in many respects from a typical case of this affection. As to the cause of its onset I am in the dark. It may have been due to the fact that the necessary manipulation of the eye in operating had roused into activity a slumbering affection of the uveal tract. The occurrence of the cataract itself can be explained upon the supposition of the presence of a subacute inflammation in the uveal tract, and, except upon this hypothesis, I am at a loss to explain either the onset of the inflammation, which resulted in the atrophic process, or the causation of the cataract.

I cannot find mention in medical literature of any case that resembles this in its more important features, and am, therefore, forced to the conclusion that it is probably, in most respects, unique.

CASE II.—*Primary Sarcoma of the Iris.* I have unfortunately mislaid my notes of this case and the dates given are, in consequence, somewhat inexact but are approximately correct. The patient, Mrs. J. H., aged twenty-three, of Punxatawney, this State, was referred to me by my friend Dr. J. J. Green. Her story as given to me was as follows: Some two years before her visit she had noticed a small growth on the iris of the left eye near the temporal margin and about at the horizontal axis of the eye. This tumor continued to increase in size, and for several months there had been attacks of pain in the eye, increasing in severity and occurring at steadily lessening intervals, until, at the time she came under my charge, in the latter part of February, 1896, she was at no time entirely free from pain in the organ, and at times the suffering was exceedingly severe. Her general health was good, and family and personal history negative.

Inspection of the eye showed the presence of a tumor in the anterior chamber attached to the iris by a base about four millimeters in length, The tumor was about the size of a fair sized split-pea and completely covered the pupillary area. It was dark gray in color and was rather smooth in contour. It was attached about midway between the scleral and pupillary border of the iris on the temporal side. The husband of the patient stated that rather frequent hemorrhages occurred from the tumor into the anterior chamber, and at these times the pain was worse than at other times.

In endeavoring to gain some idea as to the rate at which the tumor was growing, I questioned the patient as to the length of time she had been blind in the eye, supposing that with the pupillary space covered by the growth, vision must of necessity be wanting. To my surprise, she replied, "I am not blind in the eye; I can see very well with it." Sceptical of this fact, I carefully occluded the sound eye and placed her in front of the test-card, and, to my further surprise, found that her vision was almost full $\frac{20}{30}$. It puzzled me for some time to determine the route by which this vision was obtained, but upon closer inspection I determined that it must be through a small opening in the tumor directly in front of the center of the pupil, which I had before thought was simply a point from which a hemorrhage had occurred. Examination of the eye subsequent to removal proved this supposition to have been correct. The tension of the eye was markedly increased.

I diagnosed the trouble as a probable sarcoma of the iris, mentioning, however, the possibility of its being a gumma, and suggested a short course of mercury and iodid of potassium, holding in reserve the enucleation of the eye if there were no effect from the medicinal treatment. Before arriving at any conclusion in regard to the course she would follow, the patient was, at her own request, referred to my friend Dr. Lippincott for further opinion regarding her case. His opinion was confirmatory of my diagnosis and of the treatment advised. The patient thereupon concluded to be guided by my advice, and I accordingly placed her upon specific treatment, which was continued for a brief time, but without results, except, indeed, that the tumor possibly increased somewhat in size. Satisfied that nothing was to be gained from following out this course further, enucleation was urged and consent for it obtained. The patient was sent to St. Francis' Hospital and the eye removed in April, 1896.

Recovery from the operation was uneventful, and at the end of the second or third week after the operation she returned home, having delayed her departure longer than was necessary in order that she might take home with her an artificial eye. Since her departure, I have heard nothing directly or indirectly from her, and I am therefore in ignorance of the subsequent history of the case. Section of the eye showed the attachment of the tumor to be as previously described. The central opening before mentioned was undoubtedly the pathway by which light entered the eye. The opening, on the corneal side, was exceedingly minute, but on the pupillary side of the tumor it was several times greater in diameter. The tumor was rather firm and pigmented. Hardening of the growth and subsequent microscopic examination at the hands of Dr. Matson showed it to be a small spindle-cell sarcoma.

Primary sarcoma of the iris is a rare affection. I have never before met with a case, the nearest approach to it having been in a man referred to me in 1893 by Dr. Scroggs of Beaver, Pa. In this case there was a tumor several millimeters in diameter lying partly on the cornea and partly on the sclera at the temporal side and in the horizontal plane of the eye. It had, at some time in the past, penetrated from the interior of the eye, as its pedicle was attached to the ciliary body and iris through an opening in the eye at the sclero-corneal limbus. Vision in the eye was almost normal, and in consequence of this fact, the patient refused to consent to removal of the eye, although my diagnosis of sarcoma was confirmed by Dr. Lippincott. At the patient's request, I removed as much of the tumor as it was possible to reach without invading the interior of the eye, after having made plain to him that the growth would almost certainly recur. Microscopic examination of the growth confirmed the diagnosis of sarcoma. Not many weeks elapsed before he was back again with a recurrence of the growth, and this time I positively refused to adopt any other course than that of removal of the eye, which was done at the hospital. Unfortunately, my resident failed to understand my directions for the preservation of the eye and, in consequence, no section of it was obtained.

All the text-books on ophthalmology make mention of primary sarcoma of the iris as an extremely rare occurrence. The Graefe-Saemisch "*Handbuch der Augenheilkunde*" speaks of it as a very unusual condition, of which a few cases have been reported, and Galezowsky of Paris states that he has seen one case in 50,000 cases of eye trouble. In the opinion of the writer, the treatment of sarcoma of the iris should be limited to nothing less than removal of the affected eye. The difficulty of determining whether the disease has affected the structures behind the iris renders any less radical measure a dangerous procedure, and would much increase the risk of recurrence in other organs.

SELECTION.

THE SPREAD OF THE BUBONIC PLAGUE.[1]

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Without entering into the discussion as to whether or not all epidemics styled "plague" in biblical and medieval literature were of the nature of the bubonic plague of recent times, there can be no doubt that since 1850 the name "plague" has been applied to a definite train of symptoms which are considered to constitute a specific disease. As we proceed, it will be seen how during different outbreaks some one symptom attains a fatal preëminence, but not to the exclusion of others which might at any time assume the death lead, and serve to baptize the disease as "Bubonic," "Hemorrhagic," "Typhoidal," "Pneumonic," and so forth.

Name.—During the latter half of the century the names bestowed on plague have been as follows:

1. In 1856, in Tripoli, it was known as "typhus with glandular swelling." When the disease reached the island of Chios in the same year, it was called "petechial typhus analogous to that of Tripoli."

2. In Mesopotamia, where the disease was prevalent from 1856–85, and possibly up to the present day, the

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[1] From the *Medical Press and Circular*, December 30, 1896, and January 6, 1897.

titles "adynamic typhoid fever," and "intermittent fever with glandular swellings," were usual.

3, In Persia, where plague seems to be endemic since 1863, the term "hemorrhagic fever" is used to designate a pestilence which differs from the diseases with which the Persians are familiar,

4. During the years 1877–79, the Russian province of Astrakhan was visited by a disease which was, and is, regarded as plague, but which was variously described as

(*a*) Intermittent fever with buboes.

(*b*) Croupous pneumonia with buboes.

(*c*) Typhus with glandular swellings proving fatal by pneumonia.

(*d*) A peculiar form of mumps.

That all the above-mentioned outbreaks were actually plague, a specific disease, caused by a specific bacillus, will never be known; but the presumptive and clinical evidence is decidedly in favor of their being one and the same disease.

The name "plague," however, is not one which helps us to place the complaint in its proper scientific niche in the category of disease. The word conveys the idea of an unusual disease attacking many persons and attended by a high mortality, but that gives it no scientific value any more than the "Wan-Yik" of the Chinese. Were I to attempt to classify plague, I would place it among the specific fevers, and particularize it under the name of "polyadenitis," and individualize it still further as "malignant polyadenitis."

The term "bubonic," so frequently applied to the disease, is not so appropriate as would at first sight appear. A bubo is essentially the swelling of a gland caused by the entrance of septic materials in the tract of lymphatics over which the gland presides. This cannot be said to obtain in plague, for the so-called buboes of plague can in no sense be regarded as a sympathetic swelling, but merely the outcome of a blood poison.

Definition.—Plague, or malignant polyadenitis, we may define as:—*An acute febrile disease of an intensely fatal nature, characterized by inflammation of the lymphatic glands, marked cerebral and vascular disturbances, and by the presence of a specific bacillus.* It is only since 1894 that we have been able to set forth a definition with precision; it is only since then that we have acquired the knowledge of a definite bacillus by which the disease can be recognized scientifically when ordinary symptoms are in abeyance. In this definition no mention is made of hemorrhage, pneumonia, petechiæ, or carbuncles.

Distribution.—At the present day, plague is confined to Asia; but since 1850 it has made its appearance in Europe, Asia and Africa.

The basin of the Mediterranean and the strip of country which runs parallel to that sea across the Asian continent, from Turkey to China, may be roughly taken as its present belt during the nineteenth century, but the Mediterranean part of the belt has disappeared almost wholly within the present generation. A map of the plague-stricken districts within the last fifty years shows plague astride the Himalayas, with a giant limb reaching on one side the Red Sea, and on the other the shores of the Pacific.

THE CONTINUITY OF PLAGUE OUTBREAKS.

It would appear that in the plague belt the disease is ever active, now in one place, now in another. At times we find it in Arabia, then in Persia, and the Himalayas, and the wave travels eastward over Yunnan and Southern China to the sea. The disease oscillates, now east, now west, but with a fatal precision, making the slow swing of the pendulum of plague within a fairly definite area.

Cause of Plague.—The cause of plague is the advent of a definite bacillus and it is the life-history of this bacillus which must in future occupy the attention of bacteriologists and clinical observers. The proximity of the bacillus is, at the present day, known only by its effect on human beings, and it may be, rats, as well. What fosters it appears to be bad sanitation; once established, time alone will stay its ravages so far as any given epidemic is concerned, but there seems every hope that improved sanitation will check its recurrences.

The *prodromata* of plague may be divided into the remote and the immediate; but I will consider them together. Time and again has it happened that before an outbreak of plague, during a period varying from a few months to several years, buboes with fever have been observed in a more or less epidemic form. In 1877 a variety of plague which infested Astrakhan previous to the outbreak that occurred in 1878, some 150 miles higher up the Volga, was classed as a *pestis minor.* No one died of the disease *per se*, and but few people were confined to bed. From Calcutta comes the news of the discovery of a bacillus allied in every respect to the Kitasato bacillus of true plague, and associated with the variety of plague known as *pestis minor*, which has convinced me that the two are identical. The bacillus is stated not to possess the toxic or virulent properties of the true plague bacillus, but to be similar in all other respects.

THE COMMUNICABILITY OF PLAGUE.

Infection and Contagion.—Direct contagion, that is, transference of the disease from the sick to the healthy by bodily contact, would appear at the first glance to be an element in the transmission of plague. How otherwise can we explain the circumstance that when a case of plague occurs in a house, those dwelling in the house and brought in contact with the sufferer are almost certain to be seized, and not only so, but few, if any, of the other inmates escape? The next in order to be seized by plague are the relatives of the sick and the visitors to the house, who, going to their own homes, set up a fresh focus of infection. Of the community, doctors, clergymen, and attendants who are brought in contact with the sufferers more readily acquire the disease than others who are alien to the family and house. These facts would appear to prove conclusively the contagious nature of plague.

But there is another side to the argument. As long ago as 1835, when plague was epidemic in Egypt, out of *ten French doctors* who attended the sick, only one contracted the disease. Further, we have the well-known case of Bulard during the same outbreak, who, anxious to prove his contention that the contagious nature of plague was much exaggerated, for two days wore the shirt of a patient who had died of plague, yet Bulard did not contract the disease.

More recently we have the evidence of the Hong Kong epidemic in 1894. None of the European doctors in attendance on the plague patients, in all some fifteen in number, were attacked by plague. Those men were freely exposed in the wards and at *post-mortem* examinations, yet none were infected. Further, none of the British and Italian-born nurses—these were the only two nationalities represented—were attacked by plague during 1894.

But a more interesting fact still, is that none of the Chinese students of the College of Medicine were attacked. For six weeks these men were on duty in turns night and day in the Plague Hospital. Eight of them acted as ward attendants and clerks throughout the period, and were consequently in constant contact with the sick. A racial immunity might be claimed for Europeans, but in face of this fact it cannot hold good. If there be any truth in the acquisition of disease during an epidemic by fear or nervousness, the case of these students refutes the aspersion. They saw that the Europeans escaped, and how terribly their countrymen suffered; they had to contend with the superstitious beliefs of their country, inherited and acquired ; they were breathing the same air, eating similar food, hearing daily, hourly even, of the deaths of their friends, relations, and acquaintances; yet none of them succumbed to plague. We have, therefore, two opposite conditions before us, namely, plague entering a house and seizing practically all the inmates; and, on the other hand, doctors, nurses, and native students acting as medical clerks and dressers, escaping completely. Where then lies the truth of the contagious nature of plague ?

As usual there is a channel of escape from either of these two extremes of argument. The immunity above related does not extend indefinitely. The Europeans attacked during the 1894 epidemic were chiefly soldiers of the Shropshire Regiment, then stationed in Hong Kong. When plague required sanitary interference beyond the power of the local board, these soldiers came forward and volunteered to help in the work of cleansing and purifying the city. The work assigned to them was of the most laborious order, and they were exposed to a concentration of the contagion, for the field of their duty lay among the dwellings of the poorest class of Chinese who were suffering from plague. Those houses were of the vilest kind of habitation mankind is acquainted with; small, windowless, low-ceilinged, reeking with filth and excretions, they presented infection in the most concentrated form. Further, the soldiers had to use spade and shovel to dig down into the accumulated layers of dirt on the floors of the houses and throw it into the street. It was this occupation, this raising of the dust, more than any other to which is attributed the infection of the soldiers.

The evidence of the subsequent outbreak in Hong Kong in 1896 goes to show that Europeans were much more frequently attacked than in 1894, and two of the nurses in attendance on the sick contracted plague. One of the nurses was a British-born nursing Sister at the Plague Hospital, where she had been for many months. She never was ill until the very end of the epidemic, when she got a sharp attack of the plague from which, however, she fortunately recovered. The Sister believes she was infected by a little child she nursed, and whom she frequently carried about in her arms. The other European nurse was an Italian-born nurse in the convent, who believed she was also infected by carrying about a child sick from plague. The Italian Sister died of the disease. It is interesting to note that the patient from whom the English Sister contracted the disease recovered, whereas the patient of the Italian Sister died. Another Sister in the convent died, presumably infected while nursing her companion. These three deaths seem to point to a contagion rather than infection as the means of spread, for although there were some 600 persons in the convent, none of the other inmates were afflicted.

Gathering this evidence together and trying to focus it we found that the soldiers, who were affected, were exposed, if there is any truth in intensity of contagion at all, to the most concentrated form of the poison. They worked, not in the streets in the open air, but in reeking hovels for several hours together. Intimate and prolonged contact with the contagion in an active condition seems to be the explanation of their *infection*.

The same is to be said of the two European nurses who were seized. Both attributed their ailment to intimate and prolonged *contact* with a generating source, *viz.*, a child carried in the arms, not for a few minutes, but for several hours daily, extending over several days.

That there are, however, degrees of power in the contagium even when emanating from the human body seems to be supported by the nurse and infecting child both recovering in the one instance, and the nurse and infecting child both dying in another. Bulard sleeping in the dead man's shirt proves nothing further than that the plague-infected garment did not *generate* poison of an intensity sufficient to infect. The poison grew every moment more dilute, but a nurse carrying a child throwing off contagium continuously is an exposure of a different stamp.

The immunity of the doctors and Chinese students does not annul the effect of prolonged and intimate contact as being a means of spread; for it must be remembered the doctor *visits* only; he does not stay for a day beside one case as a relative does, nor does he sleep or eat under the same roof as does a nurse. In this way also the immunity of the Chinese students is to be accounted for. They performed their task in a newly-built, commodious, and roomy mat-shed, freely ventilated by being raised three feet from the ground, and its lofty roof constructed so that air swept across between the side walls and the roof, with large apertures in the roof itself, the chance of contracting the disease from so diluted a form was reduced to a minimum.

The practical lesson to be learnt from these statements is that free ventilation and attention to hygienic rules lessen the chance of contracting the disease to a very great extent, not only for Europeans, but also for natives; but that all are liable to contract the disease when, either from the calls of duty or wilful neglect, exposure is extreme.

What has been termed the "MIASMATIC" method of infection bears distinctly upon the maintenance and epidemicity of plague. Miasmatic infection implies a soil-bred disease; a disease existing as we assume malaria does in the earth itself, in the water, or in some particular form of fermenting or decomposing material in which the germ finds a nidus. In a neighborhood so infected, the disease is endemic, as manifested by the fact that again and again the disease recurs; that after a few months of seemingly complete disappearance the disease crops up and runs a more or less severe course.

Rats.—Rats are known to be infected and die of the disease. Moreover, they are a great source of infection indirectly to man by infecting the water supply.

Snakes.—Dr. Thomson remarks in the *British Medical Journal*, September 8th, 1895, page 560: "Moreover, when rats are thus dying, dead snakes also are said to be found about the site in unusual numbers." Later on he remarks: "The snakes eat the rats."

Dogs.—Dr. Mouchard, in the *Chinese Customs' Medical Gazette*, in the forty-seventh and forty-eighth issues, remarks that dogs died during an epidemic of plague. He ascribes it to the dogs eating the flesh of human beings or any other animal dead of plague.

Pigs.—It is even more important to ascertain whether or no the pig is infected. Pork is largely consumed by Chinese; and, moreover, Europeans in the East seldom or never eat Chinese-fed pork. The Chinese died of plague whilst the Europeans enjoyed an immunity from the disease; nothing seems more conclusive than that pork was the infecting food. Moreover, most of the pork brought to the Hong Kong market comes from Pakhoi, a town where plague has been endemic for years.

The first point to be settled is, Does the pig suffer? *Not as a rule.* The pigs from Pakhoi showed no falling off in numbers, and they were not sickly; the former condition would have obtained had plague thinned their numbers in Pakhoi, and the latter would have been found out when they reached Hong Kong, where careful inspection of all food supplies is made.

Dr. Mouchard writes: "We saw on some roads dogs and pigs feeding undisturbed on corpses which no one cared to bury. These animals fell victims to their greed and succumbed to the scourge."

Further, plague has been produced in the pig experimentally, all of which goes to prove that pigs die of plague after consumption of corpses dead from plague and inoculation; but that pigs are not primarily liable to plague in the same way as rats and pigeons, seems conclusively shown.

It will be seen at once that the infection of birds would render the possibility of the rapid spread of contagion and the appearance of the plague in isolated districts easily explicable. It is not comfortable news that we may have a winged distribution of plague.

To sum up our knowledge we find:

1. That the rat is the animal most liable to be attacked.
2. That rats suffering from, or dead of, plague may infect other animals which consume them.
3. That rats are always affected by a disease similar to plague at the same time that man suffers.

INCUBATION.

The time intervening between exposure to and the development of plague is three to six days as the period of incubation, but the evidence within the last few weeks from Calcutta renders the period of incubation of ambulatory plague uncertain.

Invasion.—The onset of the disease in malignant polyadenitis is known to be usually sudden and severe. The patient is seized with headache, fever and prostration, and compelled straightway to seek his bed. In a few hours or a few days a swollen gland develops, and the disease runs its course. But we have on record many cases where high fever existed and the patient did not even feel ill; or where a gland swelled up with no general feverish state. Such cases are sufficient to show that fever or plague may exist and the patient not be aware of it; and the glands may be affected for a fortnight before the disease declares itself in the usual way, by headache, fever and prostration.

The onset of the disease, therefore, even during a plague epidemic, may not be so definite as we should like to believe, and as yet we have no charts recording the condition of the patient between the time of exposure and the invasion.

The Bacillus.—The bacteriology of plague began by the advent of Kitasato from Tokio during the Hong Kong epidemic of 1894. On June 14, 1894, Kitasato demonstrated the bacillus, which was confirmed afterward by Dr. Yersin, of the Pasteur Institute, in Saigon, working in an independent manner. The bacillus has been variously described as (1) a diplococcus; (2) diplococcus enclosed in a delicate capsule; (3) a short bacillus with the ends somewhat rounded and a clear space or band in the center. Professor Woodhead writes: "The size varies considerably according to the staining method employed, the organism appearing rather smaller in the watery gentian-violet solution than in the glycerin-fuchsin solution. It is plain that the size of the capsule and its staining capacity vary very considerably; and it is quite possible that this appearance of a capsule is like that which is sometimes met with around the bacillus of anthrax stained in special solutions in that it may be simply a refraction from the albumin from the constricted bacillus, due to the drying and other processes of preparation." In the figures drawn by Woodhead an organism was met with in some specimens which seems to indicate a development after death. The last statement may be the most important of all, and its confirmation will be anxiously looked for during the present outbreak in India. It may be the first step toward a knowledge of the life-history of the bacillus in the same manner as the flagella of the *plasmodium malariæ* are found to develop in the field of the microscope some half-hour after removal from the body.

THE ACCOMPANIMENTS OF PLAGUE.

Climatic.—The weather does not escape blame for a share in the presence of plague when it rages in the midst of a community. Be it dry, the drought is mentioned as a cause; be it rain, the floods which ensue are held to have damaged the crops, and the grain supply is spoiled, or the miasm resulting from the subsidence of the swollen streams is connected with the outbreak. In Southeast China the epidemic of plague developed at the end of a prolonged and exceptionally dry season. The rainfall was so deficient that most of the wells throughout the district were exhausted, and the crops suffered severely.

Without driving the argument of drought too deeply home, it must, however, be observed that in Bombay we find a similar condition of things before the present outbreak. The rainfall over a wide area of country has been so greatly deficient that wide-spread famine has followed.

Rain.—In Hong Kong it was hoped, in 1894, that, with the advent of rain, the epidemic would abate. The rains delayed their onset until well on in May, by which time the epidemic had got a hold in the town. With the rains came an accession, a marked accession, of the number of plague cases. The flushing of the drains and gutters, the replenishing of the wells with a plentiful supply of water was attended by an increase in the outbreak.

Before referring this positively to the effect of procuring a more moist nidus for the bacillus to develop in, the effect of rain on the habits of the people has to be noticed. In all warm climates a number of the male portion of the inhabitants sleep out of doors, on the roof, in the street, or in verandahs. The effect of rain is to drive all such sleepers within the house, to shut the windows and doors, and to generate all the evils of overcrowding.

Heat and Cold.—In Canton the plague commenced when the temperature averaged about 60° F., and continued when the average daily temperature reached 90°F. Further, it must be noted, that the disease disappeared when heat and moisture were about 90° throughout the district, so that with regard to the common statement that it thrives best at a temperature between 80° and 85° F., it must not be forgotten that, while thriving, it also disappears at the same temperature. It dies out when the conditions which we believe to be suitable for its propagation, heat and moisture, are at their best.

Overcrowding.—The argument of overcrowding might be at once set aside by the sweeping statement that just as plague flourishes in crowded cities so likewise it flourishes in barren deserts where the population is sparse in the extreme. An analogous disease, typhus, behaves in well-nigh the same way, and typhus is looked upon as the direct outcome of overcrowding. Now overcrowding may take place in a country house as readily as in a town house, and the poorer the country the greater the overcrowding. Typhus prevails in isolated houses on the west coast of Galway, Ireland, where the air around is of the purest. But eight or ten people or more in one room, not only sleeping there for warmth, but residing there well-nigh all day when the weather is inclement in winter, will foster any disease that foul air is capable of producing. As with typhus, so with plague.

Poverty.—Plague is ever associated with scarcity and want. Sometimes it is famine caused by the destruction of crops by floods; sometimes by drought; but from whatever cause, plague and scarcity of food are frequently allied. Not only is the grain scarce, but it has often been remarked upon that it is bad, musty, covered may be by blue mold and fermented. The two conditions are to each other as cause and effect. The grain is gathered before it is ripe, owing to the people's necessity, and the unripe grain not only yields insufficient nourishment, but it is apt to undergo fermentation and be attacked by vegetable parasites.

In India, at the present moment, a serious scarcity prevails and famine threatens. The prolonged drought is the cause of failure of crops, and, moreover, the consumption of diseased grain is universal. It may be argued plague exists when famine is unheard of; but the combination which also means overcrowding of houses, must be a factor, if not the chief factor, in the propagation of the disease.

Sanitary Conditions.—The preceding remarks prepare the way for the recognition of possible sanitary evils and neglects as accompaniments of plague.

Chinese towns are at all times ready to generate any filth disease, and Hong Kong itself is but little better. The city was hastily built about fifty years ago, when the sudden inroad of tens of thousands of Chinese sought occupation and habitation under the British rule. From that rush of people and feverish haste to build without proper control, the city never recovered, and to this day presents sanitary aspects of the most flagrant description.

MEDICAL PROGRESS.

The Normal Male Urethra.—JUDASSOHN and DREYSEL report results of their investigations of the normal urethra (*Archiv. f. Dermatol. u. Syph.*, Bd. xxxiv, p. 349). They found the capacity of the anterior urethra to be much greater than it is ordinarily given, depending of course on the power of resistance in the musculus compressor urethræ. With an irrigator held at a height of 80 c.m. the average capacity was found to be 7.8 c.cm.; at 130 cm., 10.65 c.cm.; at 200 cm., 12.9 c.cm. The average quantity which could be injected with a syringe was 11.8 c.cm. The greatest capacity found in any case was 22 c.cm.—a little over 5 drams. It follows from this investigation that in order to accomplish the maximal distension of the urethra, which is so important in gonorrhea, the irrigator should be hung very high.

Of the capacity of the posterior urethra one cannot really speak, for the most minute quantity of fluid injected into it flows at once in the direction of the least resistance, that is, in most cases, into the bladder.

Another interesting point which the authors determined is the reaction of the mucous membrane of the urethra which they found to be constantly alkaline, even after the passage of very acid urine. An occasional exception was found in the fossa navicularis. However as gonococci grow upon both acid and alkaline media this point has no evident practical bearing.

Injuries of the Liver.—The *Rev. de Chirurgie*, October, 1896, contains a complete article upon injuries of the liver, by TERRIER and AUVRAY. The section on diagnosis is well worth repeating. In many cases complicating injuries will obscure the hepatic symptoms so that a diagnosis is impossible, but in many other cases where there is a contusion in the neighborhood of the liver the physician, by carefully locating the pain, can tell whether the injury is simply of the abdominal wall, or extends deeper into the liver itself. If the liver is injured there is a feeling of weight in the right hypochondrium, radiating toward the epigastrium, umbilicus, shoulder, etc. It is a deep pain, not very quick, nor excitable. Pain resulting from a contusion of the abdominal wall is more superficial, and disappears in repose, to recur violently at the least muscular contraction. It is also accompanied by ecchymoses. These may of course be present with injuries of the liver, but not necessarily so.

Besides these local symptoms there are others which are equally valuable in injuries of the liver, such as internal hemorrhage, jaundice, and urine containing sugar, or albumin, or bile. With reference to prognosis, ruptures of the liver, occurring among 750 cases of injury, have hitherto given a mortality of eighty-six per cent., while the mortality for the whole series of injuries was only sixty-four per cent. These figures have recently been much improved by an early exploratory incision and rigid aseptic treatment, so that Terrier and Auvray for their own forty-six cases obtained a mortality of only twenty-eight per cent.

Tuberculosis of the Knee.—The *Gazette Hebdomadaire de Médecine et de Chirurgie* recently contained a review of a work by Koenig upon Tuberculosis of the Knee, which brings out some interesting points concerning this disease. During a period of eighteen years, from 1875 to 1893, Koenig observed and treated 720 cases of tubercular disease of the knee joint—so that his statistics are of considerable value. Of this number 427 were males and 293 females; the right knee was affected 364 times, the left 326, both knees 13, and in 17 cases the location was not noted. In 691 cases the starting point of the disease was observed. In 281 or 44.5 per cent. it began in the bony structure of the joint, and in 351 or 55.5 per cent. the synovial membrane was the primary seat.

Of the bones, the tibia was most frequently involved, *viz.*, 107 times, the femur next, 53 times, the patella 33 times, and in 48 cases all of the bones were affected simultaneously.

The plans of treatment adopted were rest in a proper position, extension, injections of 5 per cent. solutions of carbolic acid, iodoform, glycerin and Koch's tuberculin, and the various operations of arthrectomy, excision and amputation. His conclusions based on this large number of cases are:

1st. That the majority of cases will recover under conservative treatment, but only a few will have a considerable range of motion, and a large proportion will recover with ankylosis in a flexed position.

2d. That no definite prognosis as to the time of cure or the result can be given in the beginning.

3d. That where a case is rebellious, does not improve under conservative treatment, and there is a strong probability of ankylosis in the end, an operation should be done.

Among children arthrectomy is the operation of choice; in adults, excision.

Tuberculosis in other localities is not a contraindication to an operation.

He condemns early amputation in these cases, but also opposes those who wait until the patient has become exhausted by pain and prolonged suppuration.

Menstruation and Conception During Lactation.—REMFRY, by investigation of 900 nursing mothers (*Rev. Intern. de Méd. et de la Chir.*, 1896, No. 5), found that in only 57 per cent. was there absolute amenorrhea. In 20 per cent. menstruation was normal, while 43 per cent. menstruated irregularly. Conception during lactation was also common, especially with the menstruating mothers, *viz.*, 60 per cent. Among those who did not menstruate at all, only 6 per cent. conceived while nursing.

THERAPEUTIC NOTES.

Urethritis: Treatment with Airol.—LEQUEN and LÉVY (*La Presse Médical*, 1896, p. 595) report favorably upon the use of a solution of this remedy as an injection in acute and chronic gonorrheal urethritis.

The remedy, which is a combination of iodid of bismuth and gallic acid, resembles dermatol, but contains more iodid and less bismuth oxid, and is an odorless, tasteless powder, unchanged by light and stable in dry air.

Applied to moist surfaces, it decomposes into its constituent parts, and thus acts as a dessicant and antiseptic.

While insoluble in ordinary media, it forms in the following combination an emulsion which has been used by the writers:

Airol, ...	2 grms.
Glycerin, Aqua dest., } aa. . . .	10 grms.

After washing the urethra with a four-per-cent. aqueous solution of boric acid, an injection is made once daily of 6 cc. of the emulsion.

Treatment for Vertigo.—The following remedy for vertigo, when occurring in arterio-sclerosis, is recommended in the *Rev. de Therapeut. Méd.-Chir.*, November 1, 1896:

Ergotin, ...	10 centi gr.
Extract of Calabor Bran, .	2 "
" " Gentian, . .	q.s.

For a pill. From 1 to 20 are to be taken daily, increasing the dose according to the toleration of the patient.

To Remove Tattoo-marks.—MINIME (*Monatsheft. für pract. Dermatol.*, November 1, 1896) states that in order to remove tattoo-marks the skin is to be washed with a concentrated solution of tannin, pricked with needles. Into the punctures is thrust a sharp-pointed stick of silver nitrate, under considerable pain. Silver tannate is formed in the skin and the tattoo pigment gradually eliminated.

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SATURDAY, JANUARY 23, 1897.

THE PLAGUE IN INDIA.

THE nature and characteristics of the bubonic plague now raging in India are interestingly described in this week's issue of the NEWS by Dr. Cantlie of London, who speaks from personal knowledge and observation. The present outbreak is intensified and made more horrible from the fact that it has appeared in the midst of a widespread famine. The horrors of the situation can with difficulty be imagined. Hundreds are dying daily, and the panic-stricken people are deserting their homes and fleeing from the plague-infected cities. Already a half million are said to have left Bombay. This migration is likely to spread the infection throughout the countries of Western Asia. Add to this process of dissemination the approaching annual pilgrimage to Mecca, and there is presented a combination that becomes appalling.

As a means of propagating disease, these gatherings of pilgrims are the most potent factors known to the civilized world. A few pilgrims infected with cholera germs, by bathing in the sacred pools from which all drink as a sacred rite, have been the means of spreading cholera over remarkably wide regions of country. If to this scourge, which is endemic in the Moslem realms, there be added the destructive forces of the bubonic plague, there will doubtless eventuate a mortality that will surpass all known records. How effectually this may be stamped out or restricted by sanitary enactments and quarantine supervision becomes, therefore, a vital question. At the time of the cholera epidemic in 1894, a system of quarantine was organized by international agreement which proved most efficient and satisfactory in preventing the disease from passing the gateway of the Suez Canal.

This system consisted in establishing quarantine stations at both ends of the Red Sea—one at Camaran to inspect all ships bound to the eastward, and another at Tor, near the entrance of the Suez Canal. At Tor, all ships containing pilgrims from Mecca were obliged to disembark their passengers. These were then arranged in groups, according to their destination, and carefully inspected. Those found sick were placed in hospital, and the members of the group in which they were discovered isolated from the others and kept under prolonged observation. In the meantime, all the passengers were thoroughly bathed, their clothes and luggage subjected to disinfection by heat. The ship was fumigated and scrubbed with germicides. The passengers were then reëmbarked and the vessel allowed to proceed on her journey as far as Suez, where she was again inspected by quarantine authorities, and detained if found infected. To prevent the escape of suspects into the interior during their stay at Tor, a cordon of soldiers was stationed around the entire encampment.

Fortunately, therefore, the international quarantine has this plant established and ready for active and efficient work. Dr. Doty, the Health Officer of New York, has recently returned from a tour of inspection, and he assures us that the system is so complete as to give every certainty of blocking all progress of disease at this point. To make assurance doubly sure, he has inspectors at various points on the Mediterranean to keep him informed of all possible sources of infection. This, with the magnificent quarantine regulation of our ports, allays all possible fear of any invasion along our Atlantic seaboard. As the western limits of this plague are receding in successive outbreaks, and the eastern limits are advancing, it is quite possible that the most imminent danger threatens the Pacific Coast, and quarantine regulations may require serious attention there.

THE SIGNIFICANCE OF RENAL PAIN.

Pain in the neighborhood of the kidney is often very severe, and exists as the chief symptom of many abnormal conditions in this organ. Very often an examination of the urine passed at a time closely associated with the attack will reveal pus, an excess of irritating crystals or other evidence of renal mischief, as blood ; but in other cases the urine gives far less guidance in diagnosis than could be desired. Because of the severity of these pains and because the severity and degree of disease may necessitate operative interference their diagnostic value is great, and it behooves the physician to call to mind, in their presence, their various possible causes. Of course, renal colic due to the passage of a calculus from the pelvis of the kidney through the ureter, will suggest itself as the most probable cause of the attack. The history of previous attacks of a similar character, the radiation of the pain downward into the groin and testicle, or to the end of the penis, aid in deciding that a calculus is passing; while the possible presence of blood in the urine, the irritable bladder and the exquisite agony in the paroxysm, in contrast to the remissions, and the sudden onset still further point to this condition.

These symptoms are not, however, always present in sufficient degree or in association to make the diagnosis easy, and the absence of one prominent sign may seriously impair its certainty. Under these circumstances, the physician at once endeavors to ascertain the other states of the renal neighborhood, and recalls the fact that somewhat similar pains arise from pyelitis with possible nephritic abscess, from neuralgia of the kidney or the tissues near by, from nerve pains due to spinal caries or irritation, and more rarely from tumors adjacent to or in the gland, or from aneurism of vessels, as for example, aneurism of one of the branches of the mesenteric artery. Nor are these all, for, as additional possibilities, a stone or stones imbedded in the renal substance may be found, or excessive deposits of oxalic acid or other crystals, manifesting themselves in gouty kidney, or, finally, cardiac valvular disease, more commonly of the aortic valves; while the aching of the kidney is ascribed to injury, and is most commonly met with in young females who endeavor while wearing corsets to take violent physical exercise.

The presence of pyelitis rarely develops great pain, and the appearances of the urine point clearly to the cause of the discomfort, though if the attacks be sudden in onset the cause may be calculus in the pelvis of the kidney, surrounded by septic changes.

The failure of health and the possible febrile movements and chills still further point to pyelitis. So too, nephritic abscess is accompanied by so much systemic disturbance in many cases as to make the diagnosis clear. The presence of spinal tenderness on pressure or motion in the dorsal or lumbar regions, and the history of spinal irritation or disease, decides this as the cause of the pain; but the discovery of aneurism of any of the abdominal vessels may be impossible, unless it be large enough to manifest itself through the viscera or abdominal wall on palpation. The diagnosis of stone imbedded in the kidney is very difficult and uncertain, but the onset of an attack of renal pain arising from oxaluria or an attack of gout is usually bilateral, and is associated with a scanty urine of high specific gravity, and with much lumbar soreness. A gouty history or that of having eaten large amounts of oxalic acid-bearing foods, such as pears, tomatoes, and cabbage, may be recognized as the predisposing causes of attack.

Nearly forty years ago, Habershon called attention to the fact that aortic valvular disease often caused pain to be radiated into the hypochondrium, and within the last year, Ralfe has, in the Proceedings of the Medical Society of London, detailed the possibility of aching kidney being due to unrecognized trauma. He has met with young women who, by wearing tight corsets while playing tennis or other violent games, have so bruised the right kidney by some sudden and violent movement as to suffer seriously for days afterward. Again, Ralfe asserts that fairly violent renal pain sometimes arises in cases that, by reason of obstinate constipation, have accumulated in the colon hard scybalous masses which, by their pressure, produce reflex irritation and renal agony. As an illustration of the fact that Habershon was correct in stating that valvular disease sometimes causes renal pain, Ralfe asserts that on one occasion no less a person than the late Dr. Murchison called at his house with a specimen of his own urine, voided after an attack of severe renal pain which had come on at night, and which resembled true renal colic so closely that Murchison, who was a sufferer from aortic disease, was confident that he had had renal colic. A reminder from Ralfe of Habershon's statement, and an examination of the urine, soon convinced Murchison of his mistake.

In a similar paper read by Hurry Fenwick before the same society, this gentleman presented additional diagnostic information. He asserts that there are two great groups of renal stones, and that in each class characteristic pain may be felt. In the cortical stones the pain is fixed and continuous, and is liable to exacerbation on movement, but does not depend so much upon changes in the diet. On the other hand, pelvic stones cause obstruction and colic, the pain radiating down into the groin and testicle, while the urine becomes bloody, purulent, or scanty. Of course these cases are not in life divided by any strict line such as we have named ; the more cortical the more characteristic the pain, whereas if lower down there may be the symptoms usually seen when the stone is actually pelvic.

Fenwick also believes that the posture of the patient in bed is typical. In nine out of twelve cases, his patients could sleep only on the affected side. Cortical stones, in his opinion, never cease to give discomfort, but pelvic stones may become imbedded, and the patient go for long periods of time free from any discomfort.

INSANE CONVICTS IN PHILADELPHIA.

It has long been more than a suspicion in the minds of many physicians of Philadelphia that a larger number of insane convicts are incarcerated in the Eastern Penitentiary than is generally supposed. The subject was brought prominently before the public last month by the action of one of the city judges, who appointed a commission to investigate the mental condition of some of these alleged criminal insane. This commission, composed of men of high standing in the professions of medicine and law, has just made a circumstantial and conservative report. The tone of this report is admirable and highly commendable because it shows that the commission as a body carefully avoided the influence of the somewhat sensational literature which the press, and even the inspectors of the penitentiary, and the judge himself, issued upon the question. Much of this literature, including the brilliant polemics between the honorable judge on the one hand and the irate inspectors on the other, unfortunately cannot be noticed here, but the report of the commission, because both of the expert knowledge shown by its members and of the truly judicial tone that characterizes it, presents us with certain lucid aud reliable conclusions.

The method of investigation was direct and searching. The commission in a body, attended by a secretary, went to the convicts in their cells, and made minute and scientific examinations into their mental status. It should be said right here that the commission was not charged with an examination of all the convicts in this immense jail. Under the law of the state it was acting by instruction of a judge of one of the counties only, and had authority only to examine alleged lunatics who had been sentenced from that particular county. As the penitentiary is a state institution, receiving convicts from many counties, the jurisdiction of the commission was too distinctively limited to permit their report to be received as a complete record of the actual number of criminal insane at this time imprisoned within its walls.

The conclusions of the commission are briefly as follows : Of eight alleged insane convicts, the record of whose mental and physical symptoms is given in detail, five should be classed as insane, two as not insane, and one as of doubtful mental state. The five classed as insane and the one of doubtful mental state are proper subjects for treatment in a hospital for the insane. Two of these belong to the dangerous class of insane criminals, and would be best treated in an institution especially provided for the criminal insane. The commission, however, is forced to regret that no such hospital has been provided by the State of Pennsylvania.

This, in a nutshell, is the outcome thus far of what promised in the beginning to be something of a scandal. The findings of the commission are not startling, but they are, or should be, disquieting to the public conscience of the state. Certain practical deductions can be drawn which may help to focus light upon the proper points.

First, we are somewhat disappointed that the commission did not venture an opinion upon the subject of the influence of solitary confinement in causing or promoting insanity. The members of the commission possibly felt that this subject was too large to be based upon the few data which they had obtained. We confess that we do not find much in their report to warrant a dogmatic opinion that solitary confinement engenders insanity. The types of insanity observed by them were evidently the conventional forms of delusional paranoia, with deterioration, which are not uncommon in the criminal insane. This form of insanity is possibly promoted by any system of imprisonment, and until accurate statistics, by expert observers, are made, for comparison, it might be rankly unjust to allege that the cellular system is responsible for more of it than the congregate system. We have heard a most reliable and skilled alienist, of wide observation upon the criminal insane, say that insanity is so closely allied to criminality that it is almost impossible as yet to gauge accurately the effect of imprisonment, of any kind, in its production.

Secondly, the report of the commission seems to imply, although it does not distinctly say, that the authorities of the penitentiary have not been sufficiently alive to their responsibilities under the law of the state. The act of the Assembly of Pennsylvania directs that whenever any person detained in any prison is insane it shall be the duty of the judge of the court under whose order the person is detained, to direct, upon application, an inquiry by commission or otherwise, with notice to the Commission on Lunacy; and if the judge is thus satisfied that such prisoner requires treatment in a hospital for the insane, he shall direct the removal of said prisoner to a state hospital. Now, it is very evident that in such a close corporation as the Eastern Penitentiary such application to a judge lies almost wholly in the discretion of the authorities of the jail. This discretionary power was evidently not properly used in the case of the penitentiary in Philadelphia. To judge from the newspaper literature, and the utterances of the warden and inspectors themselves, these officials have been notoriously ignorant and headstrong in the exercise of their somewhat despotic power. It is even alleged that they do not hesitate to make snap diagnoses of simulated insanity, and to reflect adversely upon the value of expert testimony. These peculiarities have brought upon them a well-deserved share of public criticism, which we hope will awaken in them a sense of their public responsibilities.

Finally, the law of Pennsylvania is evidently radically defective in one essential. It directs that insane prisoners shall be removed from the prisons, but it provides no proper hospital to which to remove them. This defect is clearly pointed out by the judge of Bucks County, one of the contiguous counties to Philadelphia. He, too, appointed a commission in December to report upon the mental state of several prisoners in the Eastern Penitentiary from that county. In his instructions to this commission the learned judge called attention to the grave responsibility of removing dangerous insane criminals from a penitentiary, where they are safely detained, to a state hospital for ordinary non-criminal insane, where they cannot be safely kept. He wisely says that it is a serious question whether it is safe, wise, or proper, to commit such criminal lunatics to a hospital in which they must be detained along with the innocent. This criticism, of course, points to but one remedy — the establishment in Pennsylvania of a special hospital for the criminal insane. In this respect Pennsylvania is still backward, although not more so than many other states, but by reason of her wealth and greatness her defect is more conspicuous. We confess that we do not see what good result can come from the present agitation, unless it be the establishment of such a hospital. We believe that such will ultimately be the result, and that too much credit cannot be given to the humane judge and the enlightened and conscientious members of the commission who have taken the initiative in this important step.

ECHOES AND NEWS.

Expert Witnesses.—The Minnesota Medical Association is agitating the question of legalized expert witnesses.

Sir Joseph Lister's Peerage a Life One Only.—Sir Joseph has no direct male descendant. Lady Lister, who was a daughter of the late Mr. Syme, of Edinburgh, died a few years ago without any issue.

Prizes of the Academie des Sciences.—At the annual public meeting held in Paris, December 21, 1896, the Montyon prize of $15,000 was divided among Professor S. Laskowski, of Geneva (Atlas of Human Anatomy); M. Legrain (Researches on Alcoholism), and MM. Imbert and Bertin-Sans, of Montpelier, and Oudin and Barthilomy, of Paris (Application of Skiagraphy to Medical Science).

Portrait of Mr. Herbert Spencer.—In response to a letter signed by a large number of eminent Englishmen, Mr. Spencer has consented to allow his portrait to be painted and presented to the nation.

Resignation of Professor Chandler.—Prof. Charles F. Chandler has retired from the Professorship of Chemistry and Medical Jurisprudence in the College of Physicians and Surgeons, but retains the Professorship of Chemistry in Columbia University.

The Telephone in Practice,—A young physician of Illinois has built a private telephone line connecting his office with the residences of all his country patients. When he is older, we predict that his love for the insistent jingle of the telephone-bell will be less ardent.

Appendicitis on the Left Side.—In the case of a lad who recently died in Danbury, Conn., the usual symptoms of appendicular disease were present, but all signs were referred to the left side of the abdomen. An autopsy revealed the anomaly of a more or less complete transposition of all of the viscera and a general septic peritonitis the result of perforation.

A Woman as Presiding Officer in the British Medical Association.—The East Anglian Branch of the British Medical Association has placed Mrs. Garret Anderson in its Presidential chair. The triumphant march of women doctors into the ranks and official positions of this association has been steady and determined, and the end is not yet.

Pasteur Institutes in Russia.—There are seven institutes in Russia in active operation for the treatment of hydrophobia. The total number of patients treated between 1886 and 1892 was 14,369, of whom 265, or 1.84 per cent. died. More than 9,000 of these were bitten by dogs, and of these, 0.79 per cent. died, while 621 were bitten by wolves, and of these 16.26 per cent. died.

Total Extirpation of the Bladder.—On the 5th of this month Dr. Tuffler presented a man before the Academy of Medicine, Paris, from whom, on October 10th, he had performed complete exeresis. The patient suffered from a diffuse tumor of the bladder. By the use of a tube-syphon and hypogastric receptacle for the urine, he was thus able to return to his work much improved in his general health.

One Million Dollars for a Hospital.—Mr. J. Pierpont Morgan has offered to build a new home for the New York Lying-in Hospital at Seventeenth street and Second Avenue. He is ready to donate $1,000,000 for this purpose as soon as the management can show an endowment sufficient to carry on the work of the hospital. Mr. Duer, president of the Board of Governors, is confident that no difficulty will be found in complying with the terms of Mr. Morgan's offer.

Board of Surgeons for Brooklyn.—A bill has been introduced in the Assembly at Albany providing that after May 1, 1897, there shall be a Board of Physicians and Surgeons in Brooklyn, to be appointed by the Mayor, to perform the services now performed by the surgeons connected with the city department. The board is to consist of a chairman and nine competent physicians and surgeons. The chairman is to receive a salary of $2,500 and the other members $2,000 each.

The Pennsylvania Society for the Prevention of Tuberculosis.—It is proposed by the members of this organization to build a sanitarium for the treatment of consumptives upon the Blue Ridge slope in Luzerne county, Penn. A tract of six hundred acres of land near Glen Summit has been acquired and upon this one of five pavilions will be erected as soon as the sum of $15,000 has been raised by private subscription. A bill will be introduced asking the State Legislature to appropriate $100,000 every second year toward the enterprise.

The Use of the Incubator.—Dr. L. Fürst, of Leipzig, says that in April, 1890, he induced labor at six months and one week in a lady suffering from edema of legs and face, her urine containing sufficient albumin to make it solid on boiling. She escaped eclampsia and recovered completely. The infant, a girl, weighed, when born, between two and three pounds. She was at once placed in one of Hearson's Thermostatic Nurses (an incubator), and was thus reared, and she is now a remarkably fine and intelligent child for her age.

Dr. Abbott in the Philadelphia Board of Health.—Director Riter has named Dr. A. C. Abbott, of the Laboratory of Hygiene, University of Pennsylvania, as chief of the bacteriological division of the Philadelphia Bureau of Health, in place of Dr. B. Meade Bolton, resigned. Dr. Abbott's contributions to scientific literature have been numerous, among the more prominent being "The Relation Between Water Supplies and Epidemics," "Typhoid Fever in Lower Animals," "Report on the Koch Treatment of Tuberculosis at Berlin," he having been sent as a representative of the Johns Hopkins Hospital to Berlin to obtain the materials for this report; "The Etiology of Diphtheria" and "The Principles of Bacteriology," a text book now in its third edition.

The Fire at Bellevue Hospital Medical College.—A fire broke out early Wednesday morning, January 20th, in the rear of the upper story of the College building. The origin of it is attributed to the electric light wire. The dissecting room was entirely destroyed, as well as the story below, and the entire building flooded with water. The records of the College were saved and the contents of the chemical and physiological laboratories escaped serious damage. Fortunately most of the dissecting work had been completed by the members of the graduating class. The regular lectures were continued without interruption at the Carnegie Laboratory and the ampitheater of Bellevue Hospital. The unusually large class of students that is in attendance this year will therefore not be seriously inconvenienced. It is expected that the building will be promptly restored and enlarged.

Advertising by Medical Men.—*The Medical Press and Circular* says: "Within recent years, and more especially of late, a particularly pernicious form of advertising has arisen. We allude to the custom of forwarding purely medical works for review to lay newspapers. From Fellows and even officers of the Royal College of Physicians, this special unethical procedure has apparently met with no remonstrance. Of course, the authors will probably reply that they have nothing to do with any arrangements which their publishers might make in the interests of the sale of the work. But most persons are now aware that an excuse of this sort has no foundation in fact. It would only be necessary for an author to intimate to his publisher the desire that no copies of his book should be sent for review outside of the ordinary professional channels, and it cannot be doubted for a moment that the wish would be attended to and carried out."

CORRESPONDENCE.

A CASE OF VIRGINAL GONORRHEAL VAGINITIS.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: A. B., æt. twenty-one, school-teacher, evidently of an investigating turn of mind, consulted me in November last concerning a violent itching in her genitalia, which had been growing worse for a week past, and was now unbearable.

Examination, which was submitted to most reluctantly, revealed the mucous membrane of the vulva and hymen red, swollen, and covered with a thick whitish mucous discharge, a specimen of which, when mounted and stained, revealed under the microscope gonococci in abundance.

The hymen was intact, and barely permitted the insertion of my finger. The vagina was hot, swollen, tender, and bathed in abundant mucous discharge, showing a deep-seated infection; on irrigation, great flakes of white mucous discharge were washed out.

She was informed of her condition and put on the usual treatment.

She denied any improprieties whatever, and said, among other things, in answer to my inquiries, that two weeks before, while visiting a friend, she saw her syringe, and became possessed with a desire to use it, never having seen or used one before, "just to see how the thing worked."

Her friend instructed her in the art of using the instrument, although she had been using it for some time past with a solution of "acetate of lead and alum." This friendly instruction would seem to account for the infection.

The above may be of interest on account of the peculiarity of the manner of infection.

Yours truly,
LEEDOM SHARP, M.D.

1335 PINE STREET,
Philadelphia, December 29, 1896.

A CASE OF MUCO-MEMBRANOUS ENTERITIS, WITH DEPOSIT OF INTESTINAL SAND.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In THE MEDICAL NEWS of August 29, 1896, under "Medical Progress," appeared a description of two cases of "intestinal sand and muco-membranous enteritis," reported first by Mathieu and Richard (*Gaz. hebdom. de Méd. et de Chirurg.*, May 28, 1896).

Since reading this report I have had a similar case in my practice. The woman, æt. thirty-four years, gives a history of having had a pelvic abscess seven years ago, which finally ruptured into the bowel, and has continued discharging intermittently and in diminishing quantities ever since. On dilating the sphincter ani a small quantity of pus almost invariably escapes. This pus was examined by a bacteriologist and found to contain only staphylococci.

The patient has suffered from a chronic muco-membranous enteritis for the past five years, with alternating diarrhea and constipation. About one year ago she first noticed the passage of quantities of small sand-like masses, which she likened to grains of pepper. These masses were freely soluble in nitric acid, and under the microscope were found to consist principally of phosphate of lime, both crystalline and amorphous. The probable sequence of events in this case was as follows: The continued passage of acrid pus over the intestinal mucous membrane gave rise to inflammatory changes in it and in the glandular structures, which resulted in the development of muco-enteritis, and the muco-enteritis, in its turn, seems to be the cause of the production of the lime-salts.

The exact mode of production of these lime-salts is not well understood, but it is possible that they may be a pathological product of the mucous glands of the intestine, just as it is supposed that the greater portion of the lime-salts that enter into the formation of gall-stones are a pathological product of the mucous glands of the gall-bladder.

Yours respectfully,
ELEANOR C. JONES, M.D.

PHILADELPHIA,
December 15, 1896.

A RAPID METHOD OF FILTERING.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In THE MEDICAL NEWS of March 21, 1896, p. 325, was an article by Dr. Friend of Milwaukee, entitled "A Rapid Method of Filtering." I have recently discovered a method which I believe to be new and decidedly more rapid and convenient than the one mentioned.

Take a pledget of absorbent cotton large enough to fill the lumen of a test-tube tightly and tie a long thread to the middle of it. Then force it to the *bottom* of the tube in such position that the thread, when drawn on, shall pull from the bottom of the pledget, thereby tending to expand instead of to contract it. Now fill the tube with the fluid to be filtered, and as soon as the cotton is saturated and bubbles cease to rise from it, withdraw the cotton steadily by the thread. The cotton forms a piston of which the fluid is the valve and the thread is the rod. In withdrawing it a vacuum is formed, into which the fluid is forced. One can scarcely withdraw the pledget quickly enough to spill the fluid. Its advantages over the other methods are greater rapidity, no heating and cooling (so no liability of breaking test-tubes), and the ability to practically fill the tube with one manipulation.

Yours truly,
D. R. BOWEN, M.D.

WELLSBURG, N. Y.,
December 28, 1896.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

MEETINGS OF THE PHILADELPHIA PEDIATRIC SOCIETY, THE PHILADELPHIA COUNTY MEDICAL SOCIETY, AND THE PATHOLOGICAL SOCIETY OF PHILADELPHIA—DIVISION OF THE CHAIR OF ANATOMY AND CLINICAL SURGERY AT THE MEDICO-CHIRURGICAL COLLEGE—MEETING OF THE ALUMNI ASSOCIATION OF JEFFERSON COLLEGE.

January 17, 1897.

AT the first regular meeting of the Philadelphia Pediatric Society, held on January 12th, Dr. F. A. Packard presented a case of dilatation of the stomach. Dr. Alfred Stengel exhibited a case of chorea with arsenical neuritis. The patient—a boy about twelve years of age—had been given Fowler's solution of arsenic in ascending doses for the chorea, and was taking ten minims three times daily when the neuritis developed. All of the classical symptoms of neuritis could not be shown, yet those elicited confirmed this diagnosis to a greater extent than any other that could be advanced in the discussion of the case. An interesting and rare case of progressive neural atrophy was shown by Dr. C. S. Potts. The type was of the peroneal form described by Charcot and Tooth, the atrophy beginning in the muscles of the legs, with associated reactions of degeneration, and contractures. Three cases of cretinism were presented, one by Dr. H. B. Carpenter and two by Dr. H. M. Fussell. All of the patients were under twelve years of age, and were in no way related. Nothing new in the etiology of this condition was adduced, the point of especial interest being the marked improvement in all of the cases, both mentally and physically, under the administration of thyroid extract. A paper by Dr. George Woodward, on "The Chemistry of Colostrum Milk" proved to be a valuable addition to the scanty literature on this subject.

At a stated meeting of the Philadelphia County Medical Society, held on January 13th, an electrical headlight, the invention of Dr. Nephews of Chicago, was shown, which, from its efficiency and simplicity, should prove eminently satisfactory. The points in its favor are that, by an ingenious attachment, the current employed in the ordinary incandescent lamp system can be used, and that a switch on the headband of the apparatus accurately controls the current. Another lamp for use in the nasal cavity, or in other locations where light without heat is required, is so arranged that a continuous stream of water flows around it without interfering with the light, yet so controlling the radiation of heat that the illumination can be employed as long as desired without fear of injuring the surrounding parts. Dr. Thomas S. K. Morton exhibited a patient from whom he had removed the head of the right radius. The history of the case, when it came under his care, was that both bones of the forearm had been accidentally broken, but good union had been obtained, with, however, a neuritis of the parts and restriction of motion, which proved to be due to a forward dislocation of the radius at its head. Excision of this part of the bone down to the insertion of the biceps muscle completely restored all of its functions to the part. A case of extensive and entirely successful skin-grafting by Thiersch's method was also shown by Dr. Morton. Dr. J. P. Mann read a paper on the "Treatment of Club-foot," dividing the treatment of this condition into (1) mechanical and (2) mechanical and operating. Dr. Mann expressed himself as being essentially opposed to the removal of bone for the correction of the deformity, and stated that the employment of suitable apparatus after subcutaneous operation would accomplish equally good, if not better, results, except in the rarest of cases. Discussion of the paper by Drs. Willard, Young, Morton, and Davis agreed in the main with Dr. Mann's views, except that a larger field was conceded to the open operation than that granted by the author.

At a stated meeting of the Pathological Society, held on January 14th, Dr. D. J. McCarthy showed the specimen from a case of ruptured aneurism of the celiac axis. An interesting paper was read by Dr. J. Dutton Steele, on "The Distribution and Etiology of Cardiac Hydrothorax." Having noticed in a nun ber of cases of hydrothorax of cardiac origin, observed clinically and collected from *post-mortem* records, that the effusion, if bilateral, was generally greater on the right side, and that if one pleura alone were the seat of the transudation, it was also, as a rule, the right, Dr. Steele had endeavored to find a solution for this (at least) singular coincidence. Eliminating all other causes for edema except the heart, he found that the right auricle, from its anatomical position in front of the root of the lung and the azygos vein, if enlarged, would interfere with the return circulation from the pleura on that side, and also that this is the chamber of the heart first to enlarge in cardiac weakness. The left auricle, if distended, will also produce a like result in the left pleura, but less frequently, on account of its physiological relation to the circulation.

The Board of Trustees of the Medico-Chirurgical College, at a meeting held on January 11th, decided to divide the chair of General, Descriptive, and Surgical Anatomy and Clinical Surgery held by the late Professor William H. Pancoast into two independent chairs of Anatomy and Surgery. It is a matter of much speculative interest as to who will be appointed to these positions.

The Alumni Association of Jefferson Medical College held its annual meeting on the evening of January 16th and elected officers for the ensuing year. Dr. N. G. McCormick of Williamsport, Pa., was chosen president. Among the vice-presidents may be mentioned Dr. Thomas

Addis Emmett, of New York, and Drs. W. H. Warner, John Strobel, I. P. Strettmater, and George McClellan, of Philadelphia.

TRANSACTIONS OF FOREIGN SOCIETIES.

Berlin.

THE INDICATIONS FOR VENESECTION—SUPPURATION IN THE NASAL CAVITIES A CAUSE OF MENINGITIS—PNEUMOCOCCI IN THE BLOOD OF PNEUMONIA PATIENTS—THE VIRULENCE OF PUS IN PELVIC SUPPURATIONS.

At the meeting of the Medical Society, November 25, 1896, the subject of *venesection* was discussed. EWALD said that he had never entirely given up its use. In the last ten years he had treated 111 cases of nephritis, 18 of which had uremic symptoms. Seven of these were treated by venesection. In four of them the result was prompt and satisfactory, but in three others no good results followed. Unfortunately, it is impossible to foretell which cases would be benefited. Very little is known about the physiologic effects following venesection. One can only say that the amount of blood withdrawn will very quickly be replaced from the lymph vessels. We know, further, that the blood pressure is affected only for a moment. In order to lower its tension for a considerable time it is necessary to withdraw a very large quantity of blood—many times as much as would be advisable in venesection. Ewald's opinion was that, in general, venesection is not practised as much as is desirable.

ALBU had seen the convulsions of uremia and epilepsy cut short by opening a vein. The same was true of carbonic-acid intoxication due to disease of the lungs or heart. In these cases no other treatment is capable of producing such swift and sure results. In pneumonia the time to practise venesection is at the height of the disease, just before the crisis, and before the paralysis of the heart has proceeded too far.

LANDAU confirmed the good results attributed to venesection in eclampsia.

SENATOR thought that venesection was indicated in most apoplectic attacks. He regretted that the indications for its use in this and other diseases were not better understood.

GRAWITZ called attention to the great increase in the number of leucocytes which follows hemorrhage. The blood also shows an increased quantity of sugar and a diminished alkalinity. A person who has lost blood usually perspires freely, and sometimes has fever, so that the reaction of the entire body which follows the loss of blood may well explain the good results which have been attributed to venesection.

At the session of December 2, 1896, TREITEL read a paper on the *diseases of the brain which follow suppuration in the nasal cavities.* This cause is not so important as that of inflammation in the ear. Thus, in 6000 autopsies there were 21 cases of brain abscess, 7 of which were secondary to trouble in the ear, while only 3 were derived from the nose. When one considers the intimate relations between the nasal and cranial cavities, it is rather surprising that infection by this route so seldom occurs. The veins, and probably the lymph vessels also, are directly connected through the cribriform plate with the sinuses of the skull. Besides this, there is the possibility of infection by contiguity. From a clinical point of view, several cases have been recorded in which the same coccus was found in the meninges and in the nasal cavities, and the cavities connected with them. In some of these the relation of cause and effect was clearly proved. In about one-third of them the abscess was extradural, while nearly one-half were abscesses of the brain itself.

Suppuration in the frontal sinuses is of practical interest both on account of its relative frequency and because it is easily accessible. Further, suppuration within the skull, if secondary to that of the frontal sinuses, is usually localized, and is naturally more easily reached than that, for instance, of the cavernous sinus.

SILEX reported a case of abscess of the frontal sinus, which was opened and a very foul pus evacuated. Irrigation and drainage relieved the pain and fever, but on the sixth day these symptoms recurred without evident cause, and three days later the patient died. Nearly the whole upper surface of the brain was covered with thick pus. In the brain substance were two small abscesses. The source of infection in this case was a carious molar tooth which produced suppuration of the antrum of Highmore, the frontal sinuses, and the ethmoidal cells. Such cases Silex considered to be far commoner in the eye-classes of a dispensary than is usually supposed.

At the session of the Union for Internal Medicine, held December 7, 1896, KOHN reported the results of the *examination of the blood in pneumonia.* By puncture of a vein in the arm, blood was obtained and examined bacteriologically. In twenty-three cases the result was negative. Eighteen of these patients recovered and five died, two from a staphylococcus-empyema. In nine instances pneumococci developed in the cultures from the blood. Seven of these patients died. Only two of them recovered after having developed pyemia with metastatic abscesses in one case, and empyema in the other. These were all cases of acute pneumonia. From these results it is evident that the presence of pneumococci in the blood of pneumonia patients renders the prognosis exceedingly unfavorable. This complication of the disease is properly spoken of as a pneumococcus sepsis, which is to be looked upon as a possible cause of death, in addition to those causes already recognized. The presence of pneumococci in the blood may result from the diminished power of the resistance of the body, equally as well as from the increased virulence of the bacteria. The bacteria were found in the blood from twenty-four to forty-eight hours before death. The treatment indicated was diaphoretic and diuretic, in order to facilitate the expulsion of the bacteria.

VON LEYDEN agreed in the main with Kohn, but did not think that this was a definite form of sepsis, as the cases in which pneumococci were found in the blood did not present a special clinical picture.

At the meeting of the Society for Obstetrics and Gynecology, held November 13, 1896, KIEFER discussed the *virulence of the pus in suppuration of the adnexa.* In forty cases in which the peritoneum was soiled with pus at operation, the virulence of the pus must have been slight, as not one of the patients died from infection. The reason of this Kiefer considered to be the thick adhesions which rapidly form in the pelvis around suppurative foci. As a result the bacteria die out in the course of six months or a year, by reason of the over-production of their own toxins. During this time, therefore, extirpation is still indicated, while massage should be avoided. In abscess cavities which communicate with the vagina or intestine, the virulence of the germs may be kept up much longer.

MARTIN presented sections through the pelvis of a woman who died from heart disease with a moderate amount of ascites. From these sections it was shown that the ovary occupies a position just in front of the sacro-iliac synchondrosis. Its long axis is parallel to the long axis of the body. Its base is directed forward and a little outward, its free margin backward and inward. Other members of the Society who were present did not entirely agree with these conclusions.

SOCIETY PROCEEDINGS.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Stated Meeting, December 9, 1896.

The President, DR. J. C. WILSON, in the chair.

EDWARD MARTIN, M.D., made a communication upon the

AMBULANT TREATMENT OF FRACTURES OF THE LEGS,

and demonstrated the method of applying the dressing, also exhibiting patients. By this means the patient, instead of being confined to bed for five or six weeks, can get about and attend to light duties. The treatment has been employed by Dr. Martin in upward of thirty cases, twelve within the past six or eight months, and the results in almost all have been good. In two the results were not thoroughly satisfactory, but in these the dressing was not applied by Dr. Martin personally. One of these was a case of Pott's fracture. The deformity, however, was not greater than is often noticed after other forms of treatment, but there should have been none. The other case was one of compound fracture, with marked shortening. Five cases were shown in which the treatment had been employed, and in all union appeared admirable, without obvious deformity.

Dr. Martin explained that he was not advocating this method of dressing particularly, nor was he endeavoring to prove that it was better than any other. He merely wished to decide what its real merits are, and he was simply taking testimony. The principle on which the dressing is based is that of fixation and shifting of support. Where one or both bones of the leg are broken, there is a tendency to overlapping of the bones when the weight is thrown upon the foot. If the weight of the body can be carried from above the fracture to the ground by external support, as by means of a plaster cast passing from the knee-joint to below the sole of the foot, the tendency to overlapping will be at once corrected. If, at the same time, the weight of the body can be kept from causing over-riding of the fragments, and the fragments be fixed in good position, there seems to be no good reason why the patient should not use his leg. In the ambulant splint this end is attained by so applying the plaster that the weight of the body is carried from the tibial tuberosities, just below the knee, to the reinforced portion of the dressing lying below the sole of the foot, pressure upon the malleoli being avoided by abundant cotton padding. By this means both of the joints contiguous to the fracture are fixed.

The dressing may be open to the objection that it prevents massage. It is inapplicable when there is great swelling, and when the shape of the legs is such that the weight cannot be carried from the tibial tuberosities to the rigid dressing that envelops the leg, as in fat women with small bones. The dressing should be applied as early as possible. It requires abundant padding with some elastic material. It must be so applied that the plaster does not press against the malleoli, and the plaster must be neatly fitted below the knee. It should be worn for from four to six weeks.

On the day following the application of the dressing the patient should be gotten out of bed and made to walk with the aid of an attendant, who supports him under the arm. In a day or two walking becomes possible with two crutches, in another day with one crutch, and in a week the patient can usually get along with a cane, or without any support. The dressing has the further advantage that it is attended with less atrophy than attends other modes of treatment. The plaster employed should be fresh and should be incorporated into gauze of a coarser mesh than that ordinarily employed.

After the fracture has been reduced, under an anesthetic if necessary, a flannel roller is applied. Cotton batting is next wrapped around the member and the plaster is applied. To flange out the lower part of the plaster and to give a little more strength to the dressing, slightly flexible steel rods, molded to the shape of the leg, are applied upon the sides. The toes should point upward, so as to avoid striking objects in moving about, and the heel should be a little lower than the toes. The malleoli should be thickly padded to avoid compression by the plaster. When the plaster is designed to bear pressure at the knee-joint the batting should be thinner there. To facilitate the cutting of the plaster when it is to be removed, a strip of lead may be incorporated in the dressing. The sole of the foot is padded with a mass of cotton at least three inches thick. The plaster bandage is applied with more firmness than usual, on account of the thick layer of batting. If the patient has been anesthetized the narcosis should be maintained until the dressing has become hardened. Twenty-four hours after the dressing has been applied the patient is permitted to put the foot to the ground.

DR. ERNEST LAPLACE spoke in favor of the mode of treatment, especially in cases in which it is desirable that the patient should not be confined to bed and to the house. It has the further advantage of diminishing the danger of deformity or of imperfect union from contraction of irritated muscles.

DR. **OSCAR H. ALLIS** said that the oldest treatment on record, and one that has never been reversed, demands, first, replacement of the fragments, and secondly, their immobilization. As has been shown, these results can be secured equally with an ambulant dressing as with the fracture-box. Dr. Allis called attention to the possibility of medico-legal trouble from deformity or failure to unite in cases treated with the ambulant dressing. He further pointed out that placing the foot at right angles with the leg may result, through muscular action, in overlapping of the fragments.

DR. **J. M. BARTON** said that he had employed the ambulant method of treatment in several cases, with satisfactory results. As some patients are rendered uncomfortable by having the foot placed at right angles with the leg the heel may be very thickly padded, in order that some support may be received at this point.

DR. **G. G. DAVIS** stated that in most cases of fracture the results are directly proportionate to the amount of care expended upon them. He expressed a fear that in a difficult case the ambulant treatment would not be as efficacious as other means. He thought it would be better to defer its employment until eight or ten days after the fracture has occurred. He held that the treatment of fractures with plaster-of-Paris yields unsatisfactory results in unskilled hands, and is an untrustworthy dressing to use from the first. Displacements may take place beneath the dressing and remain undiscovered until its removal. The field for ambulatory dressings for fractures is limited. They are not at all applicable to fractures of the thigh. As a rule, not much harm results from the detention in bed necessary during the treatment of fractures of the leg by ordinary means, but when such detention is objectionable from any cause, the ambulant dressing should prove of great service. This result may be attained also by the use of a high shoe on the opposite foot and crutches, the leg being made immobile by a dressing of sodium silicate or other means. The same object may be effected by the use of a Thomas knee-splint, in which the support is taken upon the ischial tuberosities by parallel bars along the side of the leg.

Dr. **J. P. MANN** stated that he had used the ambulatory method of treating fractures on several occasions, but he was not convinced that it is the best method. He pointed out that there was some bowing in at least two of the cases shown, although this might have been present before, and it was not greater than is often seen after treatment by other means. In the treatment of such fractures the usual plaster-of-Paris splint is preferable, as during its application extension and proper apposition of the parts can be maintained. Thus, in a case of compound fracture of the tibia, a section of plaster dressing can be placed above the site of injury and another below and the two connected by strips of iron in turn bound in by plaster. If considerable swelling exist the limb can first be enveloped in cotton before the plaster is applied; when the swelling has subsided a firmer dressing can be substituted.

THOS. J. MAYS, M.D., read a paper on

THE LOCAL APPLICATION OF COLD IN ACUTE PNEUMONIA,

being the third collective report, with a discussion of fever in this disease. He presented a tabulated report of 104 cases of pneumonia treated by means of cold applications, in addition to 195 previously reported. Of ninety-four in which the sex was mentioned, sixty-three were in males, thirty-one in females. The patients varied in age from less than one year to between seventy-five and eighty. The highest temperature reached in any of the seventy cases in which this was noted was 106°F. The highest respiratory frequency in any of forty-seven cases was 50. The crisis in fifty-two cases took place between the second and tenth days. In seventy-six cases one lung was involved, in fifteen both lungs. Among the 104 cases there were three deaths—a mortality of 2.88 per cent. Among the total number of 299 there were ten deaths—a mortality of 3.35 per cent.

Dr. Mays considered at length the subject of fever and acute pneumonia in their relation to cold applied externally. He pointed out that the heat of the body is generated almost exclusively through oxidation, principally taking place in the muscles. Coincidentally there is a certain amount of heat-dissipation in a variety of ways. The temperature of the body will depend upon the relation that exists between these two processes, and it is maintained almost constant and uniform through the agency of a specialized nervous apparatus known as the thermotaxic mechanism. When the functions of this apparatus become deranged heat-production or heat-dissipation, or both, become disordered, and fever, or hyperpyrexia, or in some instances subnormal temperature results. In the lower forms of life, as in the molluscs and reptiles, the thermotaxic mechanism is but poorly developed, and the bodily temperature is largely dependent upon that of the surroundings, as is also that of warm-blooded animals poisoned with curare. In the first days of extra-uterine life the temperature of the body is subjected to wide variations, because at this time the thermotaxic mechanism is especially unstable. It has been shown that there exist in man six heat-regulating centers—two in the cortex and four at the base of the brain. Electric or mechanical irritation of these centers is attended with a rise of temperature lasting for hours at a time. Fever may therefore be looked upon as a neurosis, due to the disturbance of the thermotaxic mechanism, and not as a healthy reaction of the organism against the cause of disease. It is an indication that the function of heat-coördination is disordered, and is *per se* a morbid process. It has further been shown that the blood of animals dead from the effects of artificial fever contains a poison that causes convulsions, stupor, and death in guinea-pigs, sparrows, and frogs. The heat-centers at the base of the brain are in close anatomic relation with the respiratory center, and the rapid respiration that attends febrile states is due to irritation of this center. There is reason for believing that the pneumonic process itself is in a great measure dependent upon serious disturbance of the nervous system in which the respiratory nerves and center participate very largely, and hence the increased frequency of breathing in this disease may be due partly to central and partly to reflex influences. The close anatomic relation of the several centers at the base of the brain may explain the frequency of respiration, the high fever and the convulsions that attend inflammatory disorders implicating the base of the brain, *e.g.*, pneumonia and cerebro-spinal meningitis, especially in young children. The foregoing considerations suggest the following therapeutic indications: (1) an abatement of the local process in the lungs; (2) a reduction of fever; and (3) an alleviation of cerebral and general nervous irritation. These indications will be more satisfactorily met by the use of cold applied externally than by any other measure. Not only will cold allay the morbid process in the lungs, but it exerts a direct ameliorating influence on the nerve-centers that play so important a part in the pathology of pneumonia.

The effects of cold applications to the chest are twofold: The cold limits and checks the extension of the pneumonic process and aids in bringing about resolution; by its influence upon the respiratory and the peripheral nerves of the thorax it has a profound sedative influence upon the heart, the respiratory, and the polypneic centers. Respiration and pulse are reduced in frequency; fever abates, the temperature sometimes falling several degrees in a very short time; crisis is hastened; and if the attack is not aborted its duration is materially shortened.

Cold applied to the head acts directly on the brain. Such applications should always be made when there is high fever, great restlessness, and general irritability, and they are not out of place in less severe cases.

The cold may be applied in the form of ice contained in rubber bags, or snow in rubber bags or wrapped up in towels, or towels wrung out in cold water. The bags may be wrapped in towels, applied over the inflamed area in the lung, and held in place with bandages. If the disease is confined to the anterior portion of the base of one lung, a single large bag will suffice, but if the exudation is more extensive, or lateral, or posterior, one or two more bags will be required.

The period during which the applications should be continued will be determined by the degree of fever present. If the temperature falls to the normal, or below, and remains there, the cold may be gradually removed. Too great haste, however, should not be made in the removal, for when the temperature rises subsequently it is less easy to reduce. It must be borne in mind that the applications are made not only to reduce temperature, but also to prevent extension of the morbid process in the lungs.

DR. JAS. TYSON stated that his personal experience in the treatment of pneumonia with cold had been so satisfactory that he had concluded to treat all cases of this disease presenting high temperature in this way. It is likely that this employment of cold is serviceable exactly as it is in the treatment of typhoid fever, while the high temperature, being less protracted, is less dangerous. There need be no fear of harm coming to the patient from the cold, however applied, so long as the fever lasts, but the application should be discontinued as soon as the temperature approaches the normal. It is well not to use cold in cases, especially in old persons and alcoholics, in which there is no elevation of temperature.

DR. JAS. M. ANDERS said that he had employed cold in the treatment of some eight cases of pneumonia, with good effects in all. In none was the disease aborted, but the general course of the attack seemed to be somewhat milder than under other methods of treatment. Cold is, however, not to be employed as a routine measure in this way; nor is it applicable to all cases of acute pneumonia. The cases should be selected. Neither infants nor old persons, nor those debilitated, or with markedly sensitive organizations, are suitable subjects. In some cases the application of cold will do harm rather than good. It is especially in the first stage of the disease that cold is useful in the treatment of pneumonia.

DR. H. A. HARE said that after the stage of congestion had passed and the second stage entered upon, indications must be met and combated as they arise. A temperature of 103° or 104° F. that lasts for only a day or two exerts no particularly deleterious influence, but when hyperpyrexia is reached heatstroke must be considered. It is not likely that cold applied to the chest does more than reduce the temperature. In the early stage of pneumonia the relief of congestion by appropriate measures should be attempted, but if the lung is choked up with exudate, the cold can be of little service. When the stage of consolidation has developed the continuous application of cold could not be hoped to expedite resolution and absorption; and great care must be exercised in the treatment of cases of pneumonia in which, on account of inherent feebleness or delicacy of the system, cold is contraindicated. The continued application of cold to the chest up to the occurrence of crisis may result in a sudden decline in the temperature, with the patient in collapse.

DR. S. SOLIS-COHEN said that if statistics could be relied upon to prove anything as to the treatment of a disease by a special method, the statistics presented would at first sight seem to prove the contention that cold had a special influence upon the pneumonic process; but cases of both catarrhal and croupous pneumonia differ so much in origin and in course, as well as in the complications with which they may be attended, in the age and constitution of the patient, and in the time and circumstances under which they are manifested, that it would be utterly impossible for any one plan of treatment to answer in every case. On the other hand, the statistics of Fenwick, from the London Hospital, including a thousand cases of acute lobar pneumonia, show clearly the usefulness of fever and of fever-heat as Nature's method of bringing about recovery. From these statistics it appears that thirty-five per cent. of all deaths coincided in time with the sudden defervesence, the only period more fatal than this being that of the highest fever. Cases attended with an average temperature of 103° F. presented the minimum of mortality, the states of apyrexia and of hyperpyrexia corresponding with the maximum of danger to life. Dr. Cohen has seen a number of cases in which cold applications seemed to do good. If any general rule could be laid down, it might be to use cold applications whenever they added to the comfort of the patient; when they added to his discomfort, it may be inferred that they are harmful. A similar rule would apply to the use of hot applications.

DR. ERNEST LAPLACE maintained that the fever of pneumonia is a direct product of toxins circulating in the blood, resulting from the activity of the pneumococcus, and acting upon the thermogenic centers. It has been found that most violent diseases, surgical or medical, attended with high fever, have a tendency to recovery, while those attended with less fever display less of this tendency. Violent disturbances of the body, attended with high temperature, seem to lead to alterations of the soil that render this unfavorable to the life of the invading germs.

DR. J. C. WILSON emphasized the statement that the height of the temperature is not an index of the severity of the disease. There is no reason to believe that the application of cold to the chest has any direct influence upon the blood vessels of the interior of the lungs. It does, however, relieve pain, lower respiration, and reduce temperature. There is also no ground for believing that it limits the exudate or hastens crisis.

DR. J. P. C. GRIFFITH said that in watching the treatment of pneumonia with cold at Vienna years ago he found that it relieved pain, but did not influence the progress of the disease.

DR. M. V. BALL said that children between the ages of four and twelve with croupous pneumonia bear the treatment with cold very well, being relieved of pain and sleeping comfortably.

DR. MAYS in conclusion added that at first he had treated only cases of acute pneumonia with cold, but that the reports in cases of all kinds were so favorable that he did not continue to make the discrimination. While fever is not an index of the severity of the pneumonic process it is also no index of the degree of thermotaxic disturbance. Dr. Mays maintained that in many cases the local application of cold not only limits the pneumonic process, but that when applied early enough it cuts short the disease. While a temperature of 104° F. may not be dangerous to life in most cases, most physicians prefer to see a lower temperature; so that while fever may be a good thing for the disease it is a dangerous experiment for the patient. While the treatment with cold is not applicable to all cases of pneumonia it is available in the majority. It is not asserted that general bathing is useless in the treatment of pneumonia, but the best results are to be secured from the local application of cold.

ANNOUNCEMENTS.

THE STATUS OF PULMONARY TUBERCULOSIS IN NEW YORK CITY, AND ITS CONTROL BY THE BOARD OF HEALTH.

NEW YORK, January 11, 1897.

HON. CHARLES G. WILSON, PRESIDENT OF THE BOARD OF HEALTH.

SIR: Nearly eight years ago the Health Department of the City of New York took its first steps in the education of the people regarding the communicable and preventable character of pulmonary tuberculosis. At that time this view of the nature of tuberculosis was held by only a very small proportion of the medical profession; now it is not only the universal conviction of the medical profession, but also a wide-spread belief among the laity, that pulmonary tuberculosis results solely from the transmission of infectious material from the sick to the well, and is wholly preventable.

It is a little more than three years since the Board determined that the time had arrived when more energetic measures for the prevention of this disease could be properly taken, and adopted resolutions requiring the notification of all cases occurring in public institutions in this city; the inspection of premises in tenement house districts, the instruction of the occupants, when reported as suffering from tuberculosis, and the renovation, when required, of all rooms or apartments occupied by consumptives, which had been vacated by death or removal. The Board also at this time offered to assist physicians, free of charge, in the diagnosis of cases of suspected tuberculosis by the microscopical examination of the sputum.

The action of the Health Department in relation to this disease has always been as nearly abreast of the knowledge furnished by the most advanced scientific investigations as was practicable, and the methods adopted in the past have been followed by the most encouraging results.

The Department has cause for extreme gratification in the marked increase in intelligence and care, especially among the poor, which is observed in the presence of this disease, as the direct outcome of its conservative and educational policy, and in the proportionate curtailment of the danger and the suffering incident to it. During the past twelve years there has been a reduction of more than thirty per cent. in the general mortality from all tubercular diseases in New York City.

But the time has now arrived, we believe, when more comprehensive and radical measures should be adopted to rapidly and materially diminish the prevalence of pulmonary tuberculosis in this city.

Some idea of the enormous sanitary importance of the subject is obtained by reference to the records of the Department showing the reported cases and deaths during the past year. Nearly 9000 cases of tuberculosis were reported to this Department, and nearly 6000 deaths resulted from this disease. It is conservatively estimated that at least 20,000 cases of well-developed and recognized pulmonary tuberculosis now exist in this city, and an additional large number of obscure and incipient forms of the disease. A very large proportion of the former cases constitute more or less dangerous centers for infection, the degree of danger depending, in each instance, upon the intelligence and care which is exercised in the destruction of the expectoration. It may be safely assumed that from the failure to safely dispose of the sputum of consumptives, from thirty to fifty inhabitants of this city daily become infected by tuberculosis, and of these about one half later die from the disease.

All this suffering and death, in view of modern scientific knowledge, we know to be largely preventable by the efficient enforcement of simple, well understood, and easily applied methods of cleanliness, disinfection and isolation.

The knowledge now at command regarding the methods of extension of pulmonary tuberculosis entirely justifies the belief that its ravages can as certainly be limited by proper sanitary control and appropriate treatment as can other infectious diseases, more acute, more dramatic, and more readily communicated, but at the same time far less prevalent, less fatal, and incomparably less important to the welfare of the community. We fully believe that with proper regulations tuberculosis may be restricted within the narrowest bounds, and eventually, perhaps, almost exterminated. This is not the idle dream of sanitary enthusiasts or theorists, but is a conviction founded upon the most thorough and conclusive experimental investigations, which have been amply confirmed by practical experience.

In order to make possible such restriction in the prevalence of this disease, it is necessary that the Health Department shall assume a more complete and comprehensive control. This requires, first, the adoption of such measures as shall make possible the general sanitary supervision of pulmonary tuberculosis under well-defined conditions and regulations, differing in many respects from those applied to other more readily communicable diseases; second, the possession of such facilities for the care of the poor suffering from it, as shall make possible the removal, when necessary, of those who are dangerous sources of infection.

From the beginning of this work the officials of this Department have encountered, in the utter lack of proper facilities for the care of consumptives, an obstacle to practical success so great, and so disheartening, that we feel impelled to urge our conviction that the grave responsibilities which rest upon the Health Department in this matter cannot longer be adequately sustained without the immediate establishment, under its direct control, of a hospital for the care and treatment of this disease. No week passes in which the officials of this Department do not encounter many instances in which the members of many households, numerous inmates of crowded tenement houses, employés in dusty and unventilated workshops, and many others, are exposed to imminent peril from victims of this disease, to whom either the doors of our over-crowded public institutions are closed, or who reject all proffered assistance and instruction, and, from ignorance, indifference or inability through weakness due to the disease scatter infectious material broadcast, and thus diminish their own chances for recovery, and imperil the health and safety of others. In such cases the sanitary suggestions of the Health Department Inspectors are now futile, and effective action impossible. We are convinced that no other factor is so potent to-day in perpetuating that ominous death list from pulmonary tuberculosis, as the lack of proper facilities for the care of the poor of this city stricken with this malady.

The best medical opinion forbids that persons suffering from pulmonary tuberculosis be treated in association with other classes of cases in the general medical wards of general hospitals. This opinion is based on the daily observation that consumptives, when occupying hospital wards in common with other classes of cases, not only constitute a serious source of danger to other patients, but that they are themselves placed under peculiarly unfavorable conditions. This is an opinion which the former action of this Board has done much to establish and extend. It has very properly resulted in the exclusion, to a large extent, of persons suffering from this disease from many of the general hospitals to which they were formerly admitted.

The special hospitals for the treatment of pulmonary tuberculosis now existing in this city, are not free public hospitals, and are quite unable to meet the demands upon them by the poor. Much larger numbers than formerly of this unfortunate class of sufferers are forced to seek admission to the already over-crowded institutions of the Department of Public Charities, as other doors are closed to them; so that further provision for them must, of necessity, be made by the city. These cases appeal for care at all stages in the course of the disease, but, as a rule, seek for admission to the hospitals only when suffering with well developed, or advanced forms of consumption.

The Department of Public Charities is not able to provide separate accommodations, excepting to the most limited extent, even for these advanced cases, and, as a result, actual isolation does not exist in any of the municipal institutions. In every one of the institutions of the Department of Charities and the Department of Corrections consumptives are found occupying beds in the general wards of the various hospitals; associating with healthy prisoners in the cells, and in the greatly over-crowded work-rooms of the work-house and the penal institutions. Many of these cases, as we know from careful investigations, are sources of actual danger to their associates. No precautions whatsoever are taken with regard to the expectoration in many instances, and everywhere the precautions taken are utterly insufficient.

A communication has been referred recently to this Board by the Honorable Commissioner of Corrections regarding numerous cases of pulmonary tuberculosis which exist in the Workhouse, with the inquiry whether this Department could not, in some way, care for them. An investigation has shown that there are many cases of pulmonary tuberculosis among the inmates of the Workhouse; that these are, in part, in the hospital wards, and, in part, are among the well inmates in the sewing and work-rooms, which are badly ventilated, dusty, and excessively over-crowded. It was found that in these rooms there were no sanitary provisions whatsoever in regard to the expectoration, and the most favorable conditions existed for the transmission of the disease.

Over 2200 cases have been reported to this Board as admitted during the past year to the various institutions under the charge of the Department of Charities, and 900 cases in addition have been treated in the various dispensaries under the charge of the Department of Charities.

As the Health Department has already declared its conviction that pulmonary tuberculosis is a communicable disease, and has taken steps looking toward its prevention, and as the information at hand shows that it is far more fatal than any other communicable disease with which the Board has to deal, and destroys each year more lives than all the other communicable diseases together, it would seem self-evident that some efficient and far-reaching measures should be at once adopted to protect the inhabitants of this city from its further ravages.

The importance of provision for the separate care of persons suffering from other forms of communicable disease has long been universally admitted, and the maintenance of separate hospitals for these diseases is justly recognized as one of the most effective of the sanitary measures for securing public safety. There are most urgent reasons why similar measures should be adopted in dealing with pulmonary tuberculosis.

A large experience in this matter has shown that in institutions devoted solely to the care of consumptives, the general welfare of the patients is more easily fostered, the risks of fresh infections more certainly diminished, and the chances for recovery more surely enhanced than in general hospitals in which all classes of cases are received.

We believe that such an institution in charge of the Health Department would secure all these advantages, without encroaching in any way upon the province of the institutions now caring for such patients, and would contribute, as no other measure can, to the success of the endeavor of the Department, now pursued in the face of hopeless obstacles, to curtail the ravages of pulmonary tuberculosis in New York.

We would, therefore, respectfully recommend:

1. That such action be taken by the Health Board as seems necessary and proper to at once secure the provision of hospital accommodations, under its charge, for the care of the poor suffering from pulmonary tuberculosis, who, as active sources of danger to the community, may properly come under its supervision.

2. That an amendment be made to the sanitary code declaring that tuberculosis be officially considered a communicable disease, and formulating regulations under which its sanitary surveillance shall be exercised.

3. That all institutions in this city which admit and treat cases of pulmonary tuberculosis be subjected to regular and systematic inspection by officials of this Board, and that specific regulations be established for the conduct of such institutions, in accord with the proposed amendment to the sanitary code.

4. That the scope of the measures designed for the education of the people in regard to the nature of pulmonary tuberculosis, and the methods to be taken for its prevention, be enlarged, and a closer sanitary supervision be maintained over individuals suffering from this disease in the densely populated tenement districts, and in the crowded work-shops and public buildings of this city.

(Signed) Hermann M. Biggs, M.D.,
Pathologist and Director of the Bacteriological Laboratories.

T. Mitchell Prudden, M.D.,
Consulting Pathologist.

Approved by the Board of Health of the Health Department, at a meeting held January 12, 1897.

Emmons Clark, Secretary. Charles G. Wilson, President.

ATTENUATED TEST CULTURES AS A SAFEGUARD AGAINST PSEUDO-REACTIONS IN SERUM DIAGNOSIS OF TYPHOID BY THE DRIED BLOOD METHOD.

To the President of the Board of Health of the Province of Quebec.

Sir: In my work on serum diagnosis, done jointly with Dr. D. D. MacTaggart, we recently met with a series of peculiar partial reactions in which the dried blood solution from many perfectly healthy persons gave a very decided agglutination. The blood serum from the same persons was found much less liable to give these pseudo-reactions. This made it less easy to exclude other febrile diseases, and as with this test, accuracy in the negative diagnosis is of great practical importance, others who may meet with similar pseudo-reactions will be interested in learning how they may be avoided.

These pseudo-reactions were not encountered in our earlier cases when attenuated cultures were used. They began to appear when we employed the short time virulent cultures, and disappeared again on resuming the use of attenuated ones. Active, virulent cultures intensified by daily transplantation and growth at the body temperature, were therefore not suitable for the dried blood test. Where only active cultures are employed, we do not think that the dried blood method can be considered to have had a fair trial.

The explanation of this difference appears to be that the serum contains relatively less of the substances causing agglutination than solution of the entire blood. Hence solutions of the entire blood react more intensely to the test than solutions of the blood serum alone. This was the reverse of what we had anticipated.

It is found that old laboratory stock cultures kept at room temperature and transplanted at intervals of about one month give us the best result. Bouillon test cultures grown from this stock for twelve to twenty-four hours at body temperature, are found to react decisively with solutions of typhoid blood or typhoid serum, the reaction being as a rule well marked within fifteen minutes. With non-typhoid blood or serum solutions, the same test cultures give no reaction even after twenty-four or forty-eight hours' contact. Intra-peritoneal injection of 1 c.cm. of such living bouillon culture produces in guinea-pigs a marked blood reaction and immunity without much disturbance of health. We find that the best results in cases of dried blood are obtained with cultures where the motion, as seen under the microscope, is of a rapid gliding character, but free from darting movements. If the movement is sluggish, owing to too great attenuation of the culture, a few daily transplantations at body temperature will make it more active. Exact estimation of the degree of dilution has not been found necessary for ordinary diagnostic work when attenuated cultures are used. A very faint tint in the drop examined usually indicates sufficient strength. The solution should not be thick or viscid.

All the results which I have reported (*New York Medical Journal*, October 31, 1896, and *British Medical Journal*, December 5, 1896) were obtained with attenuated cultures. A report giving some additional technical details has been prepared and will be sent to any who desire further information.

I remain, yours respectfully,

Wyatt Johnston,
Bacteriologist to the Board of Health, Province of Quebec.

Montreal, January 7, 1897.

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ORIGINAL ARTICLES.

THE SURGICAL ENGINE AND ITS USE IN BONE SURGERY.[1]

BY MATTHEW H. CRYER, M.D., D.D.S.,
OF PHILADELPHIA.

THE requirements of a satisfactory surgical engine are, first, that it be so geared that the velocity of the cutting tool is from four to six thousand revolutions per minute, which speed is to be maintained under varying pressures. The hand-piece (the chuck which holds the instrument) should be light, capable of easy adjustment, and so arranged that the instrument fixed in it may be carried with readiness into the recesses of deep cavities. There should be no undue vibration of the instrument while held to its work as this will lessen tactile recognition of the nature of the tissue being cut. The motive power should be so arranged that it is under perfect control and produces steadiness and uniformity of speed. The hand-piece and its several parts, with the instruments used, must be of such character that perfect sterilization can be readily accomplished.

Surgical engines of several designs have been in use for many years, but, strangely enough, few general surgeons appear to have availed themselves of the advantages to be derived through their use, preferring the use of hand-tools—saws, gouges, chisels, mallets, hand-drills, and heavy cutting forceps—for their operations upon the bones. There is scarcely an operation upon osseous tissues that could not be more quickly and accurately performed by means of the engine than with any of the hand-instruments used. Many of these latter are crushing instead of cutting instruments. This singular preference has always appeared to me to be akin to a carpenter choosing hand-tools when a molding machine is available.

Objections to some of the older forms of engines were not without good foundation. As they were chiefly notable for their faults of design and of construction, the deficiencies in mechanical performance might be accepted as a necessary evil, but the impossibility of complete sterilization was an objection not so easily disposed of. These serious drawbacks have one by one been corrected, until in its present form the engine combines all of the features described as requisites of a correct machine. It is simple in design and accurately built, so that there is little liability of the mechanism getting out of order.

The performance of a series of operations upon the cadaver will readily give any surgeon a mastery of the instruments and mechanism. As with all other machines, some practice is required to give perfect control of it. The present form of hand-piece may readily be rendered aseptic.

So far as my personal knowledge goes, the first use of the engine in surgery was made by Dr. Harrison Allen of Philadelphia, in 1876, when he removed an osteophyte from the mouth of a patient by means of it. When the late Professor Garretson founded the Hospital of Oral Surgery in Philadelphia he obtained an enlarged and modified cord engine, turned by means of a crank. It was known as the Bonwill surgical engine. With all its defects of design and construction, this apparatus was of marked service, and was the progenitor of the recent forms of the surgical engine, notably of the one exhibited at the World's Columbian Dental Congress, in 1893. A description of this engine will be found in the proceedings of the Congress. Extended and accurate observation showed this engine to be too heavy and complicated to fill the needs growing out of an increased refinement and delicacy in modes of operating. The engine was not readily portable—that is, it could not be readily taken apart and packed in a small case for shipment; the hand-piece was not of a form which would permit of easy sterilization, and would not carry an instrument of thick enough shank to prevent vibration in certain classes of operations.

The present engine is new in nearly all of its features; it is simpler in design, lighter in construction, and its parts are readily detachable to permit of packing in a small case—a box not larger than those made for croquet sets. The hand-piece is designed with a twofold object—first, with a reference to the mechanical, second, to the pathological elements involved. It is sufficiently rigid to carry its tools steadily while operating upon dense bone, and may readily be rendered perfectly aseptic. The latter point is repeatedly emphasized because of the serious objection to previous hand-pieces, involving the existence of spaces which commonly retained septic matter. That portion of the engine which transmits the power from the large wheel to the pulleys of the hand-piece requires no description other than that of the illustration. The engine is driven by an electric motor of one-sixth horse-power.

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[1] The substance of this paper was read before the Odontological Society of New York, November 17, 1896.

For office practice, and when driving by electricity, the upright shaft from above the crank and the "arm" may be attached to a bracket. This plan is excellent when the engine is used in bone surgery of the nasal fossa or other light surgery about the face or ears; but for hospital and heavy work it is better to use the stand, as it can be moved about to suit the convenience of the operator.

The hand-piece has undergone complete change, in order that the several appliances used can be made absolutely aseptic and kept so throughout the operations. All that portion of the instrument which includes the hand-piece and its wrist-joint attachment, except the cord, can be throughly boiled under pressure. The hand-piece proper is detached from the pulley after the parts have been sterilized; the pulley is adjusted and the cord placed in position; the hand-piece or pieces, after sterilization, are kept in a tray containing a carbolic acid or lysol solution until used. When the surgeon is ready to use the instrument, his assistant holds the pulley attachment in such a manner that the hand-piece can be adjusted without the hand coming near the cord or that portion upon which it works. For ordinary surgery, one hand-piece is quite sufficient, as any number of instruments can be easily adjusted by opening the key-latch and inserting the sterilized instruments, which are also placed in a tray containing the antiseptic solution. For opening the brain-case it is preferable to have two hand-pieces—one with the small trephine and one with the spiral osteotome and guard adjusted. It saves time, an element of some importance in these operations.

Among the various uses for which the surgical engine is well adapted is the removal of carious bone from almost any of the bones of the body. This may be done without danger of injuring the surrounding tissue, for, when properly manipulated, operations may be performed without injury to the periosteum of the bone operated upon.

The engine has also been most successfully used in mastoid and other operations on the temporal bone and upon the nasal fossæ; also for removing caries and necrosis of the maxillary bones. The removal of even the greater portion of these bones may be accomplished without external incisions, which gives greater advantage over the older methods of operating with the cutting forceps and saws, as the parts are left smooth and rounded, not jagged and roughened.

The engine has also been used extensively in opening into the inferior dental canal or cutting through the ramus of the inferior maxillary bone to reach the inferior dental nerve; also in opening through the superior maxillary bone for resection of the second division of the fifth nerve. Another office which the engine has been called upon to fill is the opening of the brain-case with the absolute certainty of not injuring the brain or its covering membranes.

In October, 1893, the surgical engine was first used in the operation for removal of the Gasserian ganglion by Professor W. W. Keen, for report of which see Transactions of the Philadelphia Medical Society for 1894. In this case a revolving saw, with guard, was used to cut the outer table and diploë, the inner plate being broken through by mallet and chisel. During the discussion of the report of this operation before the Society, Dr. John B. Roberts made the following remarks: "With regard to this elaborate instrument, it seems to work very satisfactorily, yet for my own work I should rather use a sharp chisel with my own hand and my own mallet than any mechanical device. These are apt to get out of order, and must be at some place where they can be kept in order. What we want to do is to train our own hands to do the work, and not be dependent upon any mechanical device." This statement indicates to me a false position with regard to this class of instruments which it seems to me ought not to go uncorrected.

With all due respect and admiration for the ability of Professor Roberts, I am a little fearful that surgery would take a backward step if all its mechanical devices were done away with. I heartily agree with him when he says that "what we want is to train our hands to do the work," and I would strongly advocate the highest possible attainment of manual skill as a necessary prerequisite in the performance of all surgical operations; but when he adds that we should "not be dependent upon any mechanical device," I am inclined to take issue with him on the ground that his statement is contradictory, from the very fact that he himself advocates the use of a mechanical device, albeit a very crude one, in the shape of a mallet and chisel. After having used a dental or surgical engine for eighteen years, in all kinds of bone operations, I consider this engine as far in advance of chisel and mallet in bone surgery as the Pullman car is ahead of the canal boat in traveling.

It was decided during the operation referred to for removal of the Gasserian ganglion, and after a series of carefully-conducted experiments upon the cadaver, that the danger of wounding the membranes of the brain, and even the brain itself, had not been altogether obviated. This insecurity was partly due to the fact that brain-cases vary in thickness, and even the individual skull is thicker in some parts than in others, thus making it impossible to use a fixed guard when working from the outside of the skull. It was desired to cut entirely through the bone down to the dura mater with the engine, thus avoiding the use of the mallet and chisel, and after many trials with various burs, saws, etc., the following arrangement was devised, which has completely fulfilled the requirements, as many brain-cases have since been successfully opened with it: The cutting portion of the instrument, called a spiral osteotome, is one-half an inch in length, and one-eighth of an inch in diameter, and tapers slightly from base to point. It is divided by three spiral grooves, each having a turn of 120° through the half-inch from the base to the point of the cutting end, the arrangement of its three blades giving it the appearance of a twist drill. The point of the bur, when in use, is guarded by a button-like attachment, connected with the nose of the hand-piece by means of a shank and collar. The free end of the bur is doweled into a seat in the guard, in which it revolves, which steadies the whole arrangement when in use, gives an added rigidity to the bur-shank, and holds the bur and guard in permanent relationship to each other.

The principle involved in the instrument described is simply that of a saw arranged to cut in a line with the axis of the shaft of the bur, and not at right angles to it, as in the circular saw. Such an arrangement allows of cutting in any direction and upon curved lines. This feature is especially valuable in resections of the brain-case, inasmuch as fenestra of any desired shape or size may be speedily made.

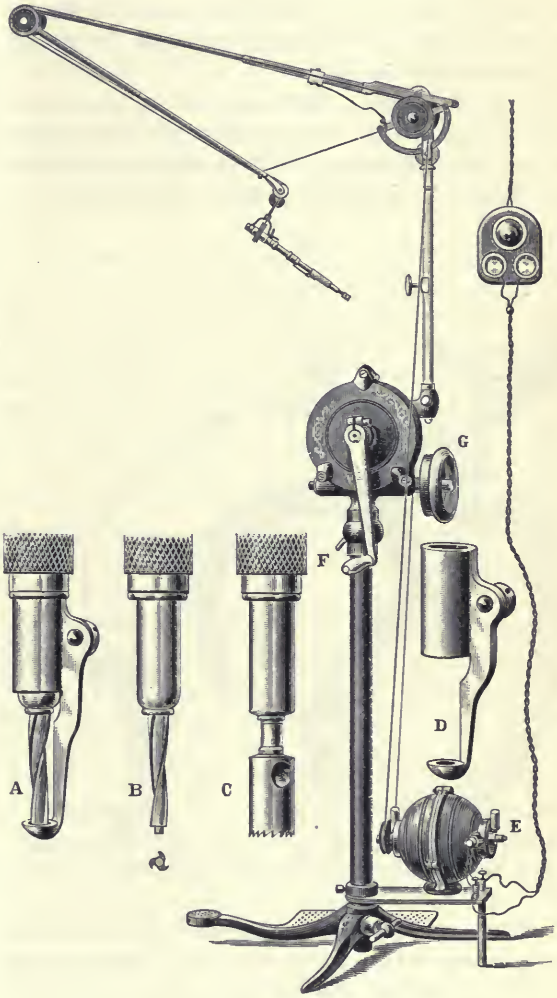
The mode of opening the brain-case by means of the spiral osteotome is as follows: After division of the soft tissues by the scalpel, a small opening is first made with a trephine mounted in the engine hand-piece; this trephine has a diameter of five-sixteenths of an inch, and is passed completely through both tables of the skull and the button of bone removed. There is no danger of injuring the dura with the trephine if it be carefully used by one who has had a little training with the instrument upon the cadaver. The opening thus made affords a means of entrance for the osteotome, with its protecting guard, which is next inserted in the opening and the section made along the lines previously determined by running the engine at high speed and forcing the bit laterally in the direction desired. The button-like guard at the point of the osteotome absolutely prevents injury to the dura, which is pressed or dissected away by it from its attachment in the lines of the cut as the instrument progresses.

The instrument as a whole has been designed not only with reference to the mechanical requirements imposed by the dense tissues which are to be operated upon, but with a full recognition of the demands which the later developments of bacterio-pathologic research have made a requirement in all surgical procedures, *viz.*, rigid asepsis of the instruments used.

DISCUSSION.

Dr. R. F. Weir: I am only too pleased to express my gratification at seeing this instrument to-night. It far exceeds my idea of its capacities, and I was especially impressed with the satisfactory way in which the deviser of the machine performed the operation. The only weak point I see is the use of the preliminary trephine opening. It is liable, even in experienced hands, to do damage to the dura and the brain, for I have used the trephine with the electric motor a number of times, and I have found that sometimes I could avoid injuring the dura and sometimes

Fig. 1.

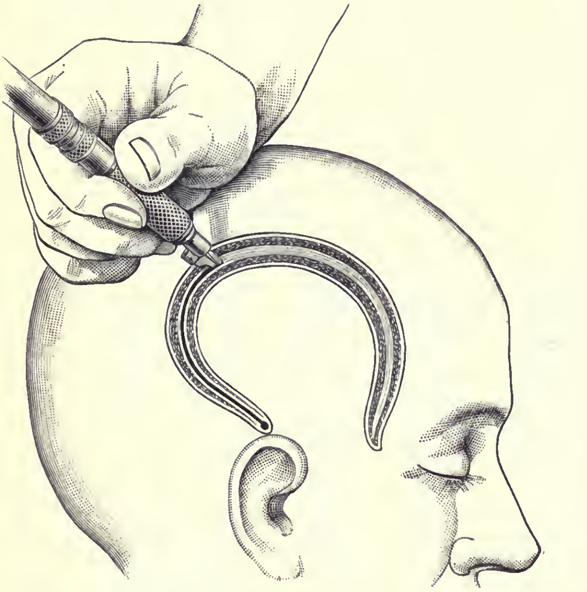


IMPROVED SURGICAL ENGINE FOR BONE OPERATIONS.
A—Spiral osteotome with guard for removing section of skull.
B—Spiral osteotome.
C—Trephine.
D—Guard for osteotome.
E—Electric motor.
F—Crank for hand propulsion.
G—Driving wheel for hand propulsion.

not. Entrance, however, being once made into the skull—I should prefer for this the Flower hand-trephine—I see nothing to prevent the use of the instrument, and I hope soon to have the opportunity of using it in the New York Hospital. Something of this kind is of great value. I feel that I cannot add anything more, except to renew my thanks to the exhibitor and to the society for the opportunity of being present at this demonstration of the ability of the improved machine.

Dr. G. E. Brewer: My experience in this department of surgery has been rather limited, but it strikes me that this instrument is by far the most satisfactory one I have seen for opening the cranial cavity. An important question, however, arises in my mind, and that is, would it be possible with this instrument to make an oblique cut through the bone, so that the edge of the bone-flap would be beveled? as it is important, in replacing the bone, to avoid a depression of the flap below the surrounding portions of the skull. In the operation shown to-night this was not done, but I see no reason why it could not be accomplished. It is certainly of advantage to save time in these operations. In the cases upon which I have operated, it required from ten to fifteen minutes to remove an omega-shaped flap of bone three inches in diameter. With this instrument the same work can be done in two or three minutes. I think with Dr. Weir that if more safety could be insured against wounding the dura by the preliminary trephine-opening, the value of the instrument and method would be enhanced.

FIG. 2.



Method of removing section of skull with cutting tool, the guard being in close contact with the internal surface, thus preventing injury to meninges.

Dr. Cryer: My experiments on the cadaver were not at first encouraging; the instrument seemed inclined to slip, and would not cut as I wished, but after a little practice this difficulty was overcome. The hand-piece should be held like a pen, with the third and fourth fingers resting upon and near the parts to be cut, which should also be firmly held. In using the spiral osteotome, the third and fourth fingers do not rest upon the head. Mechanical guards can be used to prevent the danger of the trephine plunging into the brain; but by holding the instrument properly, one who is accustomed to operations upon the cranium can, by a little practice, operate with safety without the guard, and even tell, by feeling alone, what kind of bone tissue he is cutting or when nearly through the walls of the skull.

When it is desired to return the flap of bone, and also in working with skulls of ordinary thickness, I would not recommend the use of as thick an osteotome as I have used on this negro's very thick skull; by using a thinner one, the kerf would not be so wide. It is well in some cases to use an irrigating bottle, which keeps the parts clear while being cut.

The instrument has been successfully used in making artificial sutures for children whose natural sutures have fully ossified and prevented the expansion of the brain and the enlargement of its encasement. In this operation, make the linear incision in the integument for the longitudinal suture a little to one side of the median line, to avoid the longitudinal sinus. Then it is well to trephine at the anterior and posterior ends of the line to be cut, when the instrument can be inserted at the end most convenient and the bone cut to the other opening. If an artificial fronto-parietal or occipito-parietal suture is desired, then the instrument should be entered at the anterior or posterior trephined opening and carried in the direction desired. The instrument has been passed between the longitudinal sinus and the bone without injury to the former. The guard will push an artery or vein out of its groove in the bone; but should the artery be inclosed in a canal, as is sometimes the case with the meningeal arteries, the osteotome will cut the vessel.

Dr. Blackman: While my experience in brain surgery has been exceedingly limited, I will say that I have seen some operations performed by Horsley of London, who, as an authority, is perhaps unquestioned. I have never seen anything so complete for operations on the brain-case as this instrument and its appliances. Mr. Horsley has discarded the mallet and chisel entirely, and depends upon the hand-trephine and bone-forceps of his own design. One unquestionably needs to learn how to handle the instrument. You cannot use the old trephine successfully without knowing how to handle it. I think this instrument would be particularly useful in forming new sutures, as Dr. Cryer has just said, and especially in cases of operations for allowing expansion of the brain-case in cases of idiocy, where a new suture can be formed without the removal of bone, by making this strip.

Dr. John B. Walker: I will simply say that I am very much pleased with the machine. I appreciate very much the saving of time by its use. I do not think there is anything further, unless it be that the drill could be made smaller. I suppose that could not be done and the instrument still have the same strength.

Dr. B. F. Curtis: I have been very much interested in this instrument. I think possibly one reason why the small trephine is not so apt to cause injury to the dura is on account of its size, as the large trephine is more likely to cut too deeply at one edge. The great advantage of this method of opening the skull is the avoidance of shock from the repeated blows of the mallet upon the chisel, which is a serious item, and also the great saving in blood, because the bone would be lifted out so rapidly that the vessels of the diploë, which give us so much trouble, and from which the patient may lose a couple of ounces of blood in the operation with the hand-trephine, would not have time to discharge so much blood before they could be reached and plugged. There would be a saving of blood as well as of time.

Dr. S. G. Perry: It seems to me there is one point made by Dr. Cryer which should be emphasized. I suppose there is not a dentist present who does not know perfectly well that those burs, however sharp or coarse their blades may be, when revolving, do not cut on the soft as they do on the hard tissues. I have often quieted a patient who was afraid to have me use the bur by revolving a small bur between my fingers. Of course it would not hurt the soft tissue, but that would not be the case if the finger-nail or bone were touched. I believe one can readily feel when one is nearly through the bone, and that the sense of touch would be a better guide than anything else. Any one who has had any experience with the dental engine must know what I mean, and what Dr. Cryer means when he says he can tell when he is almost through the bone.

Dr. Jarvie: There was one point in the paper that attracted my attention, which related not so much to the use of the engine as to its history. I think Dr. Cryer said the first knowledge he had of the dental engine being used for surgical purposes was in 1875. A year prior to that Dr. Arthur Mathewson of Brooklyn, an oculist and aurist, came to me and said he had a patient who had an osseous tumor in the auditory meatus. He thought I might have some cutting instruments that were finer than anything he had. I suggested the use of the dental engine, and made a number of burs, taking the ordinary fissure-bur and grinding it to the desired point. The operation was performed by drilling with a fissure-bur through the center of the tumor, then using a larger bur of the same kind; into the opening thus made a round bur was passed and the tumor burred away, from the center outward. That was certainly twenty-one or twenty-two years ago. The operation was successfully performed, the patient's life saved, and the hearing restored. I am speaking from memory, but, while I think I am correct, the date may not be exact.[1]

Another very valuable use to which this surgical engine could be put, and which has not been spoken of, is in removing necrosed bone, either of the long bones, or in any part of the body. With large burs in the engine, the necrosed bone could be burred away and the soft tissues disturbed but little. Certainly the simile that was made use of in the paper, —the difference of travel in a Pullman car and a canal boat, would be applicable to the removal of necrosed bone by the use of the engine in comparison to performing the same operation by the ordinary method.

Dr. Cryer: If in operating there are any sharp edges or points of bone left, as is sometimes the case in the removal of the superior maxilla, the finger can detect them, and the instrument can be carried in along with the index-finger, and the roughness be cut away. The instrument will not cut the finger unless it becomes caught between it and the bone. Crevices were left by the old-fashioned method of removing the superior maxillary bone, and germs of disease had ingress to the parts; but by the use of the engine these rough and deep depressions are avoided, leaving the parts even and smooth.

Recent Roentgen-ray Discoveries.—Professor Friedrich of Vienna is reported to have discovered certain black rays, called "critical rays," that issue from the Crookes tube, which, when passed through a living hand, present the skeleton as in the usual Röntgen photograph, but when passed through that of a cadaver present the fleshy tissues, while the bones remain invisible. The suggestion is made that this may prove a positive test of life or death, and thus obviate the possibility of premature burial.

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[1] Examination of the records shows that this operation was performed in May, 1876. It was reported in full by Dr. Mathewson before the first Congress of the International Otological Society, held in New York, September, 1876, and was published in the Transactions of that Congress, pp. 86–96.

In a note received recently from Dr. Mathewson, he says: "The report of the operation received very flattering notices in the medical journals and reviews, both here and abroad; has been mentioned in every standard work on the ear published since; and this method of dealing with those bony growths in the ear has been generally followed."

TUMORS OF THE MALE BREAST.[1]

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THE subject of tumors of the male breast is of interest because of its rare occurrence. Many physicians of large and varied experience have never encountered this pathologic condition. It is generally conceded by surgical writers that the forms of breast tumor met with in women are also to be found in the male breast. Although the literature is not voluminous, both innocent and malignant tumors of all types have been described in this connection. Perhaps the most elaborate statistical study of these tumors has been made by Shuchardt, and the results published in the *Archiv für klinische Chirurgie*, vol. xli. He collected 469 cases of tumors of the male breast. He found that fifteen per cent. of all tumors occurring in the body appear in the breast, while only one per cent. of breast tumors occur in the male. W. Roger Williams published in the *British Medical Journal*, vol. ii, 1892, the statistics of Middlesex, University College, St. Thomas', and St. Bartholomew's Hospitals of London, covering all primary neoplasms which had appeared during periods of from sixteen to twenty-one years prior to 1889, in these hospitals. There were in all 13,824 primary tumors, and of this number, 2,422 (or 17½ per cent.) were located in the breast. Twenty-five were in males and 2397 in females. It appears, therefore, from this large list of primary growths that the female breast is subject to tumor visitation one hundred times oftener than is the male. This group of cases, collected by Dr. Williams, includes 4597 cases of neoplasms in the male. Studying the relative frequency of site of occurrence of tumors in various parts of the body, we find that the male is afflicted most frequently with those affecting the skin—16.4 per cent. of his tumors occurring in this structure. Next in frequency is the tongue and mouth. Here 15.9 per cent. occur, while neoplasms of the mamma occur in but one-half of one per cent. of the cases.

The disposition to malignant tumors in the human body is nearly twice as great as it is to innocent ones. In the breast, an enormous disproportion is manifested, for here 81.7 per cent. of all tumors are malignant and only 18.3 per cent. benign. It is interesting in this connection to study the influence of sex upon the particular kind of tumor found in the breast. In the table of Williams, 2422 consecutive primary breast neoplasms were included. Of this number, in the male there were 16 cancers as against 1863 in the female. Three cases of sarcoma were found in the male and 92 in the female. Of myxomata, peculiarly enough, each sex exhibited 2 cases. Fibro-adenoma occurred once in the male, and 372 times as frequently in the female. Cystoma put in an appearance in the male once as against 63 times in the female. It is very evident, therefore, that primary neoplasms in the male breast are not of common occurrence. Writing in 1880, Billroth said, in the *Deutsche Chirurgie*, that fibroma, cystosarcoma, and adenoma, as far as he could learn, had never occurred in the male breast. On the other hand, he had encountered personally 7 cases of carcinoma in the breast of the male, as against 245 in the female. Their usual period of occurrence was after the fiftieth year. As far as he could determine, their course was exactly as it is in women. Sooner or later the axillary glands became involved, and death resulted after the same manner in both.

The breast gland in the male is smaller than in the female, and, being rudimentary, tumors involving it should be discovered at an earlier period. Being earlier discovered, radical measures can be applied sooner, and there should be a more hopeful outlook for them than is the case in the female.

Wagstaff, studying the question of the time of life at which cancer appears in the breast of the male, reports, in vol. xxvii, of the "Pathological Society's Transactions," 61 cases, in 40 of them the age being mentioned. Six were under the age of forty, 20 between forty and sixty years, 7 between sixty and seventy years, and 7 over seventy years. Other tumors have been found at a much earlier period in life. Thus Bryant, in his work on "Diseases of the Breast," reports the case of a male child ten months old, with a hard tumor, the size of a walnut, of four months' standing and rapid growth, located above and to the outer side of the left nipple, and freely movable upon the parts beneath, although the skin was adherent to it. It was excised at Guy's Hospital, July 22, 1874, and found to be a lipomatous adenofibroma. Dr. Thorburn described, in vol. i, 1890, of the *British Medical Journal*, a fibrous tumor, which he removed from a boy aged eleven. When first seen it was of the size of a hazelnut, but in the course of one year had grown to the size of a small orange. Authentic cases of carcinoma of the male breast, occurring at the age of thirty, have been reported by several observers, although a careful study of the recorded cases indicates that carcinoma appears a little later in life in the male than in the female; that is to say, rarely before the fiftieth year. It has been my fortune to encounter neoplasms in the male breast three times. A study of these cases may be of interest.

CASE I.—*Epithelioma:* M. T., aged seventy, a retired merchant, had always enjoyed good health. On September 18, 1888, he visited me, and said that for the preceding three months he had noticed a slight scab forming upon his left nipple. Beneath it there had been a sore. On the date mentioned, I found a tumor as large as a hen's egg, more nearly round in shape, movable, and non-adherent to any of the surrounding structures. It was surrounded by a rather extensive area of induration and its base was infiltrated. There were some enlarged glands in the axilla. On the 26th of September, 1888, a circular incision was made, the tumor removed, and with it a considerable amount of muscular tissue. The incision was carried well around the tumor, into apparently healthy structures. Drainage was employed, union was complete, and the wound firmly healed by the 3rd of October, one week after operation.

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[1] Read before the Onondaga County Medical Society, Syracuse, N.Y., January 5, 1897.

The patient wore a woolen undershirt after his recovery, which, by rubbing against the skin, produced an erythema. This subsided under the protection furnished by dressing the chest with cotton and a carefully applied bandage. On the 13th of May, 1889, he consulted me again. A slight scaly eruption had appeared upon the inner extremity of the scar, and the skin had become quite irritable. On the 4th of July, when I next saw him, an ulcer had appeared, with evidences characteristic of its carcinomatous character. To this, zinc chlorid paste was applied, and two days later re-applied. After the expiration of a week, healthy granulations appeared, but from this time on small superficial ulcers would appear at intervals at various points, which were treated with pyrogallic acid. The disposition to repair was never marked; on the contrary, new superficial ulcers persistently appeared, until ultimately a large area of ulceration had again formed. Repeated efforts were made by means of minor surgical operations and the application of various escharotics to cure the diseased condition, but all to no avail. Not only did the disease manifest itself locally, but the patient grew quite helpless because of painful manifestations in various parts of the body. The glands in the axilla became badly infected, and the arm swollen and edematous. The patient ultimately succumbed to the disease, death occurring October 11, 1890, two years and three months after its first manifestations.

Case II.—*Sarcoma:* J. M. G., widower, aged seventy-seven years; had been a laborer, but for several years had not been engaged in any work. There was no family history of malignant disease, nor personal history of syphilis. He was unable to definitely state when the first symptoms of the tumor appeared. On the 17th day of January, 1891, I was requested by Dr. Mumford to see him, and found an irregular nodulated tumor of the right breast, adherent to the skin, but still movable below, with glandular involvement of the corresponding axilla. The tumor was about four inches in its long diameter and three in its transverse. The general health of the patient was unimpaired. His blood vessels were somewhat atheromatous. On the following day I removed the breast and its tumor, making a circular incision, going wide of the tissues apparently involved, and clearing out the axilla, as I then believed, absolutely. There was considerable bleeding, and a number of vessels required ligation. The resulting cavity was large and drainage was required. The patient made an uneventful recovery, and was discharged from my personal care on the 1st day of February, two weeks from the time of operation.

I did not see him again for a year, when he called upon me at my office, and I found a small movable glandular growth in the axilla. I advised a second operation, but the patient refused. The gland increased in size very slowly, and new points of infection appeared in the arm-pit. It was not until the 20th of February, 1894, more than three years after the primary operation, that I was called to see him again. The malignant infiltration had then developed into a mass, which not only occupied the axilla but reached over to the chest anteriorly, and posteriorly to the scapula. The axillary veins and lymphatics were compressed, and, in consequence, the right arm and hand were edematous and darkly discolored. The patient was suffering intense pain. He was quite anxious to have me perform another operation. This idea, of course, could not be entertained. From this date he failed steadily, and died soon after, four years subsequent to the primary operation.

My impression at the time of operating on this patient was that we had to deal with a scirrhus of the breast, as the growth presented the ordinary clinical manifestations. I was particularly led to make this diagnosis because of the presence of secondary glandular tumors in the axilla, but the pathologist of the hospital reported that it was a large spindle-celled sarcoma. The slow course of the case after operation, it seems to me, furthermore confirms this view.

Case III.—*Fibro-Adenoma:* E. M. R., aged fifty-two, married. Negative family history. On October 27, 1896, he called upon me and gave the following personal history: He had always enjoyed good health. In December, 1895, while convalescing from a broken leg and moving about on crutches, one of his crutches slipped, striking him in the left breast. Some time during the following spring, he noticed a small tumor in the breast, which was movable, of irregular outline, and not painful. Its growth had been quite rapid. When I saw it, at the above-mentioned date, its texture was firm, it was still freely movable, and not covered with large vessels. There was no glandular infection of the axilla. At the date of my examination it was about 4½ inches in its long diameter and 3 in its transverse. Its removal was advised. On the 4th of November I operated, making an oval incision. The tumor was readily dissected from the pectoral muscles, as it was not adherent to them at any point. The axilla was opened; there was but little fat, and no glands were abnormally enlarged. However, I emptied the axilla completely. Nowhere was there any suggestion of malignancy. The wound was readily closed.

I placed silkworm-gut drainage in the wound, using about one dozen strands.

He bore the operation poorly, and required strychnin and digitalis hypodermically, but after a few hours rallied. There was never any rise of temperature after the operation. His urine was retained for several days, and a catheter had to be used. He was able to leave the hospital ten days after operation.

Microscopic examination of the tumor showed it to be a fibro-adenoma.

While this list of cases is not large, it represents, I think, a larger number of tumors in the male breast in comparison with the number of tumors of all kinds that it has been my privilege to see, than should have been my due proportion, for, as will be recollected, out of the 13,824 cases, reports of which Williams was able to collect in the London hospitals, and to which I have referred, but twenty-five times in this large group was the male breast involved. It will be observed that both of the cases of malignant tumor which I here report, occurred after the seventieth year of life. In neither was the course rapid, nor did the advanced age of the individual seem to render the disease more malignant. To what extent the very painful manifestations in parts of the body remote from the diseased area were awakened by the cancerous infection in Case 1, I cannot say. There were no evidences of malignant disease of the spinal cord, nor of secondary growths at any of the painful sites.

Koenig calls attention to the frequent occurrence of epithelioma in the nipple of old men, although Billroth, in the article from which I have already quoted, states that he had never seen such a case, nor had he found in literature a reliable record of any. No doubt many of these cases begin with that eczematous affection described as "Paget's nipple." I have, however, found the record of a number of cases, in which true epithelioma has destroyed the nipple and breast of the male, and has been followed by cancerous invasion of the axilla, and in consequence of which the individuals have died of cancerous cachexia. Sarcoma of the breast seems to occur about one-fifth as frequently as cancer. While the latter attacks the male breast once where it does the female one hundred times, sarcoma in the male seems to occur about one-third as frequently as in the female.

I cannot but feel that, had I been allowed in my second case to remove the secondary growth one year after the primary operation, in view of the slow progress made by the disease after this period, we might still have had a successful termination to our operative work, despite the advanced age of the patient. Fibro-adenoma appears to be the most rare condition encountered, as in the large list of cases which I have quoted it occurred but once in the male breast as against nearly four hundred times in the female. While tumors of the male breast, as is apparent, present no unusual features except as to their rarity, I have felt it wise to add these cases to the rather small list in our surgical literature.

THE PREVENTION OF THE SPREAD OF CONTAGIOUS DISEASES.[1]

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The wide existence of contagious diseases, their fatality, and their crippling after-effects makes the subject of prevention of the greatest importance. The question can be attacked with more chances of success now that bacteriology has thrown so much light upon the causation of disease.

A word about infection and contagion may not be inappropriate. According to Prudden, an infectious disease is one which is caused by the invasion and reproduction within the body of pathogenic microorganisms—not necessarily an invasion by bacteria, because, in one case at least, malaria, the invading pathogenic microörganism is not a bacterium, but belongs to an entirely different class. According to the same author, the contagium in any infectious process is the particular pathogenic microörganism itself, the advent of which in the body ushers in those reactions of the body cells which we call disease. An infectious disease is contagious when its contagium, that is, the microörganism which causes it, *under the ordinary conditions of life* can be freed from the body of the diseased person, and, by whatever means, conveyed to the body of another in a condition capable of lighting up the disease anew. The particular contagia of contagious diseases may be given out from the mucous membranes, from the skin, or from the various discharges of the body. The prevention of contagious diseases can only be secured by attacking the virus at its source before it has had time to disseminate itself by means of the atmosphere, or water, or in the earth. Infectious diseases may thus prove slightly contagious, or widely contagious, according to the active means taken to destroy the virus as nearly as possible at its source. Hence, the degrees of contagiousness or communicability can be influenced by the physician's art, and it is his duty to exert all the means known to science in such a direction.

A knowledge of the natural history of any given contagious disease, and the sources and life-conditions of its contagium, will best indicate how the virus may be rendered innocuous and unable to spread. This may prove comparatively easy in some cases, and almost impossible in others. Thus it is well known that the virus of scarlatina and diphtheria cling to the patient, and direct contagion from these diseases is therefore limited to a very small area, probably one or two feet; but they are essentially portable diseases, and antiseptic inunctions of the skin in the former, and frequent antiseptic gargles in both diseases should be employed to prevent a dissemination of the virus. Measles and pertussis, on the other hand, have volatile poisons, and therefore are not so easily confined to a small area. The subject of proper and complete disinfection is one beset with difficulties in the present state of science, as modern bacteriology has taught us that disinfectants do not disinfect. All germs being in intimate contact with protoplasm, they are with difficulty reached by the disinfecting agent. The cell body of a bacillus is surrounded by a substance resembling cellulose, and this, in turn, by mucoid matter, hence they collect in masses that are difficult to penetrate. The disinfectant is apt to come only in contact with the outer substance, and thus bichlorid of mercury, for instance, becomes innocuous by forming an albuminate of mercury. In order to kill, the disinfectant must come directly in contact with the microprotein, or albuminous constituent of the bacillus. Citrate of silver (1–4000) has recently been stated to be a true disinfectant, as have formalin and methyl violet (pyoktanin). According to McFarland, the value of antiseptics, like that of disinfectants, is always relative, the destructive as well as the inhibitory power of the solution varying with the microörganism upon which it acts. The following table from Baer will illustrate this:

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[1] Read at a stated meeting of the New York Academy of Medicine, January 8, 1897.

METHYL VIOLET (PYOKTANIN).

	Arrests.	Kills.
Anthrax baccillus........	1–70,000	1–5000
Diphtheria...............	1–10,000	1–2000
Glanders................	1–2500	1–150
Typhoid.................	1–2500	1–150
Cholera spirillum........	1–30,000	1–1000

I have used a spray of methyl violet in weak solution with good results in a case in which bacilli persisted in the throat after diphtheria, and when it was extremely important for the patient to see many people. Although bacilli have not been demonstrated in many contagious diseases, their virus will probably respond to disinfectants in the same way. It seems best, in the present state of our knowledge, to constantly apply some antiseptic or so-called disinfecting agent as nearly as possible to the source of the poison, and thus prevent a multiplication of the virus, ending with boiling or burning as many of the objects as possible that have been in contact with the patient during the progress of the disease.

Mr. Thomas F. Raven, in the *British Medical Journal* of July 24, 1886, states some interesting facts, to which my experience has usually lent corroboration. He says: "A short incubation period precedes, as a rule, a sudden, sharp illness, which will run either a short or a long course, with a long-continued infective power, being often prolonged by relapses, and having sequelæ of a definite and important character. It may thus be regarded as an axiom that the duration of incubation and the duration of infection bear an inverse ratio to each other. Again, when the incubation of a disease is long, the infection, even the most powerful infection, is developed early in the course of the malady, and ceases early. When the incubation period is short, the disease does not, as a rule, exhibit its effective power so soon, and there is a time, even after the complaint is declared, when the danger of communication is small. The rule, then, is: Long incubation, early, short-lived infection; short incubation, late and long infection. Exceptions prove the rule; hence, there is always a possibility of variations."

The subject of the prevention of the spread of contagious disease divides itself into (1) what may be accomplished by the attending physician, and (2) what may be attempted by the State or municipality. To the physician himself the subject is beset with difficulties, as ideal home conditions are not often found. In a private house it is well to place the patient on the top floor, where complete isolation from the rest of the family may be comparatively easy. Having isolated the case, the virus must be destroyed at its source, according to the nature of the disease, and not be allowed to disseminate itself. All superfluous articles should be removed from the room, and a sheet wetted with some disinfecting solution may be tacked over the doorway. While it is not contended that a sheet occasionally so wetted is a germ-proof barrier, it yet serves a purpose in more completely shutting in the sick room, and serves as a sort of danger signal to those without. The nurse should not mingle with the members of the family, and when she leaves the house for fresh air should change her clothing before going out of the room. The details to be observed in each case vary according to the nature of the disease. The room should be kept warm enough to allow a constant supply of fresh air to be procured by dropping one of the windows a little from the top. This will not only have a favorable effect on the patient by diminishing the chances of his own reinfection, but it will lessen the risks to the attendant. The greatest difficulty is met with in small apartments and tenement houses where the rooms are few and open into one another. Where the mother of the family has to do all the work she should have a loose wrapper to draw on in the sick room, which may be discarded on her exit. It is better to have the patient on a cheap cot which can be afterward thoroughly cleansed or destroyed, rather than upon a bed or sofa which will be difficult to free from germs. Any discharges from the nose, mouth, ears, or skin should be collected upon rags, or cheesecloth, which should at once be burned. This valuable precaution can easily be taken in the most restricted apartments, and yet is often neglected.

The question of when to allow a convalescent patient to mingle with others without the fear of infection is an exceedingly difficult one to answer, especially in the case of diphtheria. The Klebs-Lœffler bacilli may remain in the throat, as is well known, for months after even a mild attack. I have, however, never seen a case in which infection followed such persistence of the bacilli. After the end of a week or two, particularly when disinfecting gargles are employed, it hardly becomes necessary to maintain the patient in quarantine.

The germs of many diseases, notably scarlatina and diphtheria, remain long dormant in apartments; hence the necessity for thorough cleansing and disinfection. All clothing, bed-linen, etc., that has been in contact with the patient can be soaked in the solution recommended by the New York City Board of Health, *i. e.*, sulphate of zinc, four ounces, common salt, two ounces, water, one gallon. This solution is cheap, and easily procured, and may be kept constantly standing in the room. Spoons, cups, and all feeding utensils can likewise be soaked in this solution, but all articles after being taken out must be subjected to thorough boiling. Quilts, comforters, pillows, etc., may be thoroughly shaken on the roof, and then exposed for hours to the fresh air and sunlight. The two latter factors form the most harmless, but complete disinfections that are known. The furniture, floors, walls, and ceiling may be washed with carbolic acid, 1–20, or corrosive sublimate, 1–1000. These two disinfectants frequently fail to be effective because of too weak solution. The same preparations may be used to flush out sinks and water closets, as it is best not to multiply solutions. If the walls are papered they may be rubbed down with stale bread crumbs, which, bacteriologists have taught us, collect the germs. The same may be done to the ceiling. With reference to sulphur fumigation, although bacteriologists state that the fumes of sulphurous acid do not destroy spores, it has always seemed to me well to employ this procedure when possible. It certainly has the effect of sweetening the air of the room, and some practical workers in boards of health think it does good. A free application of moisture in the room increases its efficacy. The thorough airing required after the combustion of sulphur in a room may be a not unimportant factor contributing to its good effect. An ideal way of disinfecting carpets and other articles consists in steaming, and in large cities there are facilities for this practice.

When a contagious disease invades a family living in a limited apartment where complete isolation is difficult, if not impossible, the well children should be removed, if there is any place to take them to, until the illness is over and the quarters have been disinfected. This, however, is just what cannot be done in the great majority of instances, as no one wishes to harbor these poor children. To meet this dilemma, a few years ago the Committee on Hygiene of the New York County Medical Society suggested that stations or refuges be established where such children could be housed until the sick at home had either recovered or been removed, and the domicile disinfected. Houses arranged for such purposes ought to contain dormitories, and private rooms for such as could afford to pay for better accommodations. If the city authorities could be induced to establish a few such houses in various sections under the control of the Board of Health, which would transport cases upon notice from a physician, a powerful agency in preventing the spread of contagious diseases would be established.

Probably the most powerful factor in the spread of contagious diseases among children is found in the public and parochial schools. The sanitary condition of these buildings in the poorer sections of the city is bad. All the elements favoring a spread of contagion are here found. The children are crowded together in small rooms that are very poorly ventilated. Not only is the ventilation defective, but the cubic air space allowed to each pupil is insufficient. In the three lower classes of the primary schools the prescribed allowance of space to each pupil is 70 cubic feet; in the three higher grades, 80 cubic feet; while in the four lower grades in the grammar schools the allowance is 90 cubic feet, and in the four higher grades, 100 cubic feet. The Board of Health requires that in tenement houses the allowance shall be 400 cubic feet, and in some cases, 600 cubic feet, to each person. Four hundred cubic feet are required for each lodger in the lodging houses in this city. With a low allowance of air space to each child there is no suitable way in the old buildings of letting out the exhausted air and letting in fresh air in its place. It is obvious that even with a generous allowance of cubic air space if there is no way of removing foul air a room crowded with children will soon become close and stuffy, and any poisons that may be generated will become active.

In my opinion, however, one of the most powerful factors in the spread of contagion in these schools consists in the arrangement of the wardrobes, and in the lack of proper places to hang wraps and cloaks. Some of the class-rooms have narrow wardrobes at the back, where the clothing is shut in; in others the clothing is hung directly upon hooks on the wall. In a few cases the back seats are used for this purpose. Damp and dirty outer clothing should never be kept in a school-room crowded with little children. If any of these articles of clothing are infected with germs of disease, especially scarlatina or diphtheria, all the adjacent garments are liable to become infected. Much care and thought should be spent on the best means of disposing of the outer clothing of children during school hours. Whenever possible proper drying and ventilating rooms should be provided. In the schools that house the poorest children, where the danger of contagion is greatest, the sanitary conditions are the worst, as the writer has repeatedly demonstrated.

That the schools are active agents in the dissemination of contagion is proved by a recent report of Dr. George S. Lynde of the New York City Board of Health. According to this report, epidemics of measles, diphtheria, and scarlatina were directly traced to certain schools. Thus, out of thirty-seven cases of measles investigated during three weeks last October, in a restricted neighborhood, thirteen were traced to a parochial school, two to a public school, and seven to a kindergarten.

Certain recommendations made by the Board of Health for application to these schools will do much good if carried out. Thus, the use of slates, slate-pencils, and sponges shall be discontinued. According to requirement, pupils shall be supplied with pencil and pen-holder, each pupil to retain those received in a box provided for the purpose, each box to be marked with the pupil's name. Pencils and pen-holders shall not be transferred from one pupil to another without suitable disinfection. All school property left in a school building by a child sick with any contagious disease, and all such property found in an apartment occupied by a family in which a case of smallpox, typhoid fever, diphtheria, scarlet fever, or measles has occurred shall be taken by the Health Department for disinfection or destruction. Books which are taken home by pupils shall be covered once each month with brown manilla paper. Places for drinking water on the ground floors of school buildings shall be discontinued, and a covered pitcher be provided for each class-room, in which fresh water shall be placed before every session. A numbered cup, to be kept in the class-room, shall be issued to each pupil, and no interchange of cups shall be allowed. The floors, doors and door-knobs, and the stairs and banisters of school-rooms shall be washed with washing-soda solution (half a pound of washing-soda to three gallons of water) at least once each week.

The Board of Education should require that all buildings hereafter constructed for use as school buildings shall be provided with sufficient closet space to accommodate without crowding the outer garments of all pupils attending the school, this closet space to be arranged so that it can be well and easily ventilated when full of garments, and that the ventilation be into the corridor or outer air, and not into a school-room. A recent undertaking of the Board of Health consists in having the schools under the observation of medical inspectors. Much good will doubtless be accomplished in this way.

MEMORANDA RELATING TO THE WORK OF THE MEDICAL INSPECTORS OF SCHOOLS.

1. It shall be the first duty of the teachers of the different classes in each of the public and parochial schools of New York City to select every morning from their pupils those who seem to be ill or not in good physical condition, or those whom they have reason to suspect have been in contact in their families, or otherwise, with persons suffering from contagious disease. These children shall be at once separated from the remainder of the class and sent to some room set aside for this purpose for examination by the medical inspector of the school. They shall be examined by the inspector immediately after the beginning of the morning session, and the respective teachers shall then furnish to the medical inspector any special information that they may have regarding their own pupils, and shall also leave with him each day a list of the absentees from their classes, with the cause for the absence, so far as known, and the addresses of the absentees, with the time that they have been absent from school.

2. It shall be the duty of the teachers in each class-room before re-admitting to school any child who has been absent for forty-eight hours or more because of illness, or for any other cause, to refer such child to the medical inspector for examination, furnishing at the same time such information as may be in his or her possession.

3. It shall be the duty of the medical inspector of schools to carefully examine all children separated by the teachers for any reason from the rest of the class, and all those who have returned to the school for re-admission. Every child who is found to be suffering from any contagious disease, such as scarlet fever, measles, diphtheria, whooping cough, mumps, chickenpox, smallpox, typhus or typhoid fever, and any contagious skin disease, or contagious disease of the eyes, or who is infected with body vermin, or who is too ill from any other cause to properly remain in school, shall be at once sent to its home.

4. The name and address of the child, with the record of the action taken, and the reason for it, shall be properly recorded, and a copy forwarded each day before 1 P.M., by mail, to the chief inspector of contagious diseases.

5. Any child sent to its home because of illness shall be furnished with a card, stating the facts, and instructed to present this card to its parents or guardians immediately on its return home.

6. If any child who has thus been sent home for contagious disease returns to school the following day, the same action shall be taken by the teacher and physician, and the chief inspector of contagious diseases shall also be notified, and a postal card with the facts relating to the case shall be mailed to the parents or guardians. Each medical inspector of schools shall forward daily to the chief medical inspector of schools a list of absentees furnished him by the various teachers in the classrooms, and a copy of his record book, showing what action he has taken during the day, and this shall be mailed in each instance not later than one o'clock of each day.

7. If any pupil is found suffering from any of the following contagious diseases—scarlet fever, measles, smallpox, typhus fever—and the pupil's home is at such a distance as to make it impracticable, or improper, to walk, the department shall be immediately notified and an ambulance, or conveyance, will be sent to remove the pupil to its home.

8. The medical inspector shall in every case where children are suffering from sore throat take a culture of throat secretions, and forward it at once, with the name and address, to the Division of Bacteriology. Where children have been excluded because of illness, before readmission to the school, the medical inspector shall make careful examination and question the pupil closely as to the nature of the illness, if information is not already at hand as to this, and shall, under no conditions, re-admit the child to school unless entirely freed from danger, and unless, in case of contagious disease, the child furnishes the proper school certificate.

9. The medical inspector shall be responsible for and shall supervise the disinfection of desks, seats, writing utensils, etc., of pupils who are absent from school because of contagious disease, and shall see to the proper disinfection of books.

10. The medical inspectors of schools shall be held personally responsible for the existence, or extension, of epidemics of contagious disease of any kind in their respective schools, and shall, in addition to the duties described, take all necessary precautions, and use all the means required, to obtain necessary information relating to the illness of pupils, and to the methods of extension of contagious disease in their respective schools.

Finally, the dispensaries of this city contribute very largely to the spread of contagious diseases, especially among children. This is a feature of the dispensary evil that seems to have escaped notice. Children having mild attacks of diphtheria, as well as scarlatina, measles, and pertussis, are first brought in public conveyances, and then allowed to sit among other children until the physician in charge discovers the nature of the malady. Very few dispensaries have proper waiting-rooms, or take efficient means to avoid this great evil. It is a good subject for investigation by the Board of Health.

SPLITTING THE KIDNEY CAPSULE FOR THE RELIEF OF NEPHRALGIA.

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PAIN in the kidney usually denotes a gross lesion, the character of which is indicated by other manifestations. Hydronephrosis, cystic disease, and impacted calculus, are the least painful of the surgical diseases of the kidney. On the other hand, pyonephrosis, suppurative nephritis, perinephritis, perinephritic abscess, tubercular disease, and tumors, and calculi in the pelvis of the organ, commonly produce severe pain. The presence of pain in the kidney aids in locating the site of the lesion. A glance at the known distribution of the nervous supply shows that the pelvis and capsule are sensitive, whereas the parenchyma is singularly insensitive, as evidenced by its ability to undergo complete destruction, without pain, while the most trivial injury to or irritation of the pelvis or capsule will provoke violent pain. We infer, therefore, that when pain is a pronounced symptom in any lesion of the kidney, the pelvis or capsule is encroached upon.

In any of the conditions I have mentioned, where pain is a symptom, there are other symptoms and physical signs concomitant with pain, which usually enable the surgeon to determine the nature of the malady. Occasional cases are encountered, however, in which pain is the most prominent symptom, and where no physical signs or urinary changes exist to lead to a conjecture that organic changes are taking place in the kidney. Collateral organs are frequently involved in this pain, such as the bladder, penis, and testicle. Such cases simulate a condition involving a demonstrable lesion, such as renal calculus, vesical calculus, and the like. Scrutinizing and repeated examinations fail to verify such an assumption, for the urinary changes and physical signs ordinarily associated with the suspected lesion are absent. I know of no condition of the pelvis provoking sufficient pain to call for surgical investigation that would not afford abundant evidence of an inflammatory or mechanical injury competent to account for the existing pain. Such is not true of pain arising from an irritation of the surface of the kidney or its capsule. Here, violent pain may exist, with complete disassociation of all other evidences of kidney disease.

Medical literature contains reports of many cases operated on for renal calculus where no stone was found, but where symptoms subsided after operation. Here, the pain which caused a simulation of calculus was due to some obscure and undemonstrable lesion and was relieved by splitting the capsule in searching for the stone. The capsule may have been contracted, the kidney tissue swollen and tense, or some other state existed which caused irritation of the sensory nerves of the capsule, producing the misleading pain without any actual structural change in the tissues themselves. I am constrained to believe that such cases are not altogether rare. I have seen reports of two such, and three others have been reported by Dr. L. M. Tiffany of Baltimore. Two of these were included in a paper read by him before the American Surgical Association, and published in its Transactions for 1889. The third, in a patient of Dr. Trimble of Baltimore, the report of which was communicated to Dr. Tiffany, and a fourth, which I reported to him, were incorporated in his paper on "The Surgery of the Kidney," read before the same society, and published in its Transactions for 1894.

Case I.—The first case that I wish to report was referred to me by Dr. W. H. Barham of Southampton Co., Va. The patient came with the diagnosis of probable stone in the kidney. He was a man, twenty-six years of age, a farmer by occupation, slender, and pale, and his health had never been robust. At the age of ten he had had a painful attack resembling renal colic, and another some two years later. Ten years previously to my seeing him he began to complain of pain in the right loin. This pain soon grew so severe and constant as to incapacitate him from his routine work. Besides this incessant pain he had some paroxysms of excruciating pain apparently in the right kidney, extending down the ureter, which resembled renal colic. At these times there was some retraction of the testicle on the right side, and very frequent urination. No stone was ever passed. He likewise suffered pain in the bladder. At the time he presented himself to me he was in the habit of inclining the body forward and to the right when standing or walking, so as to relax muscular pressure on the kidney. When he laid down, he flexed the thighs on the abdomen for the same purpose. It required several minutes for him to rise from recumbency. All of his movements were characterized by the greatest deliberation and slowness, and all looked to the protection of his right kidney. Palpation revealed the right kidney slightly enlarged, somewhat firmer than its mate, and exceedingly tender. He winced perceptibly when bi-manual pressure was made on it.

Up to this point his history was identical with that of nephrolithiasis. Careful and repeated examinations of the urine alone furnished a peg on which to hang a doubt. In cases of stone in the kidney, the urine presents the following characteristics: There is nearly always some hematuria. When blood is passed the amount is usually not large, but is generally constant, and is increased by exercise; it is intimately mixed with the urine, and gives to it a smoky brown color; the urine is highly acid and usually diminished in quantity; pus is always present, but may be very small in quantity, due to simple irritation. If infection of the kidney occurs, the amount of pus is greatly increased. Epithelia from the pelvis of the kidney can be made out by microscopic examination. Crystals of the salts that are in excess, and which probably compose the calculus, are usually present; occasionally portions of the calculus are passed. None of these conditions of the urine was ever present in this case. The urine was absolutely normal. Thus I was forced to the belief that no stone existed, or if one was present, that it was imbedded in the substance of the kidney and was not free in the pelvis. I regarded it as a case of nephralgia simulating stone. Nevertheless an exploratory operation was demanded.

I placed the patient face downward on the operating table as being the best position to facilitate exposure of the kidney by incision. The Edebohls cushion was put under his dependent side, and the illiocostal space of the afflicted side thus elongated. An incision was made along the outer border of the erector-spinæ muscle, commencing just below the last rib, carried to near the crest of the ilium, and deepened until the perirenal fat was reached. This was torn through and the kidney exposed. A few sweeps of the finger were made around the kidney to free it sufficiently to permit its partial delivery through the wound. Inspection showed the kidney to be somewhat enlarged and the capsule mottled. Palpation revealed a firm, tense, and unyielding condition of the organ, but nowhere was there a hard mass such as would be produced by a stone. The thumb and finger compressed the pelvis between them and nothing except the pelvis and upper portion of the ureter separated them. No foreign body could be felt. The ureter for a short distance was also palpated and found to be free from obstruction. To make the search complete I took a slender, sharp, round needle and passed it into the kidney at many points, so that if a stone were present it could be detected when the point of the needle impinged upon it. Nowhere did I find a stone, but from every puncture the blood spurted freely and to a considerable height. This diligent and thorough search served to eliminate the possibility of a foreign body being present, and confirmed the diagnosis of nephralgia.

I considered the symptoms in this case as arising from a too tight capsule, and I therefore split the capsule from one end of the kidney to the other, and penetrated a little way into the kidney substance as well. This done, the cut margins gaped widely apart, and the kidney tissue bulged into the incision. I placed a rubber drainage tube in the wound, closed it with deep sutures of silkworm-gut, and dressed it with iodoform gauze. The patient made an easy and uneventful recovery. The pain began to diminish almost immediately, and when he was discharged from the hospital he had been absolutely free from pain for more than two weeks, and was otherwise much improved. A letter received from Dr. Borham several months later said: "The man is entirely well. He has had no pain since his return, has gained more than twenty pounds in weight, and has worked every day during the season in the harvest field."

CASE II.—J. S., of Irish birth, sixty-five years old, carpenter by trade, consulted me in September, 1891. In early life he followed the sea. Had yellow fever in 1850, in Colon, C. A. Ten years ago he was operated on for piles, by ligature, and cured. He had had no other serious sickness, and was temperate in his habits. For some weeks he had suffered from pain in the right loin. It was variable in intensity, but always present, and at times was exceedingly severe. Associated with it were gastric disturbances, irritability of the bladder, and now and then retraction of the right testicle. Frequently the pain followed the course of the ureter, and was occasionally felt in the glans penis. There was tenderness on pressure over the kidney. The assuming of an attitude which relaxed the muscles of the right loin brought some relief. There was some vesical irritation—enough to justify the sounding of the bladder, but this produced negative results. The desire to pass water was quite marked. There was no blood or pus in the urine. Frequent and painstaking examinations of the urine were made, both by me and Mr. Hugh Blair. These examinations, to a certain extent, bore out the opinion I had formed of the case, namely, that I had to deal with a renal calculus. When I became convinced of this, nephrolithotomy was determined on. The operation was performed November 25, 1891. It was conducted with the usual aseptic precautions. The incision by which the kidney was exposed was V-shaped, with the apex upward. On exposure, the kidney appeared larger and firmer than I have usually seen it. Palpation revealed nothing. Numerous punctures with a needle failed to detect the presence of a stone. Through each of the little wounds made with the needle a smart little geyser of brilliant blood welled high up, and the punctures continued to bleed freely. Being convinced now that I had proceeded on an erroneous diagnosis, and recalling reported cases of "capsule-splitting" for painful kidney, I resolved to practise this procedure here. Consequently, a free slit was made in the capsule the whole length of the kidney. This wound gaped widely and the kidney tissue bulged far out. Immediately the bleeding from the needle punctures ceased. A small drainage-tube was inserted, and the flesh and skin wounds carefully closed.

On the evening of the day of operation, after the effects of the anesthetic had entirely passed off, the patient expressed himself as feeling much relieved. His recovery from the operation was wholly satisfactory. The symptoms simulating calculus disappeared. The pain promptly abated, and never returned, and with its disappearance the other distressing symptoms likewise subsided.

CONCLUSIONS.

1. Nephralgia is not always associated with a demonstrable lesion.
2. When other evidences of kidney disease are wanting, the pain is perhaps due to a too-tight capsule.
3. Nephralgia may, and frequently does, simulate symptoms of gross tissue changes or presence of mechanical irritants.
4. When severe and persistent pain in the kidney exists, without other evidences of renal involvement exploratory operation is indicated.
5. When inspection, palpation, and needle punctures fail to disclose a condition sufficient to account for the pain, the capsule should be freely opened.

CLINICAL MEMORANDA.

A CURE BY HYPNOTISM.

BY WILLIAM ARMSTRONG, M.D.,
OF NEW YORK.

THE editorial in THE MEDICAL NEWS of October 31, 1896, pointed out the limited use of hypnotism and the possible injury to the subject by "diminishing his power of self-conscious coördination and direction of effort." Unquestionably this danger is a serious one, and should always be borne in mind by those who practise this method of cure. I am convinced, however, that one occasionally meets with a case of hysteria in which tonic treatment, both physical and mental, proves ineffectual, and the final resort to hypnotism is justifiable. Certainly the general tonic treatment should always be tried first, and tried thoroughly, and the indiscriminate employment of hypnotism as a panacea is to be vigorously condemned.

I submit the following case, in which I am satisfied that hypnotism cured the patient and was in no wise productive of harm:

R. F., aged twenty years, married, and the mother of a child two years old, presented herself to me in May, 1895. She said she had always been well and strong until eighteen months previously when she began to have headache and knocking sounds in her head above the left ear. This headache and knocking had persisted, night and day, for the entire eighteen months, without a moment's cessation, preventing sleep and causing great suffering. She had been steadily losing flesh, strength, and appetite during this period. After her family physician had exhausted his skill in tonic treatment, she had gone to a hospital, where she spent about a month, but with absolutely no relief. She had consulted several specialists, but they only advised general tonic treatment. No specific or malarial history was obtainable.

I found her to be a slight woman, pale and nervous, with all of her tendon reflexes slightly exaggerated. The knocking sounds in the head were apparently rhythmical, but less frequent than the pulse. The physical examination was otherwise negative, as was also the urinary analysis. Examination of the blood revealed eighty-five per cent. hemoglobin.

For several weeks she was given general tonic treatment, but without the first sign of improvement. She ate scarcely anything, and slept only four or five hours out of the twenty-four. I finally resorted to hypnotism. While in the hypnotic state she was told that the headache and knocking had disappeared. Upon awakening she announced with glee that she was entirely free from headache (for the first time in eighteen months!); the knocking, however, persisted. Ten hours later the headache returned with its usual severity. At the next *séance* she was told that the knocking had shifted to the right side of the head, which suggestion was adopted when she awoke. By this time I felt reasonably sure that her troubles were purely hysterical, and determined to make a thorough test of the efficacy of hypnotism as a curative agent. I found, by several trials, that I could not keep the headache away longer than nine or ten hours. I therefore began by hypnotising her three times a day, at intervals of eight hours, making the evening hypnotism after she had retired. In this way she soon fell into the habit of sleeping seven or eight hours every night, which habit was maintained throughout the rest of the treatment. At the same time she was put upon iron and strychnin, and insistance was made that she should eat three good meals a day and take a moderate amount of exercise in the open air. After a week of this treatment, during which time she was entirely free from headache, the hypnotism was applied only twice a day for ten days, then once a day for two weeks, then every other day for a month, and so on, gradually lengthening the interval until, at the end of six months, she was being hypnotised but once in two weeks. The treatment was then stopped. The idea of the cautious lengthening of the interval was to retain the confidence of her sub-consciousness. Had the suggestion been made early in the treatment that the headache would remain away for any great length of time, her confidence in the prediction might not have been great enough, and ground lost instead of gained. As it was, the confidence steadily increased with time. Such, at least, was the theory on which I worked, and it would seem to have been borne out by my experience. Every time that the interval was lengthened there was a slight return of the headache at first, but she soon adapted herself to the change. It was not until the third month that I succeeded in ridding her of the knocking sounds in her head, after which there was no recurrence. During the first three months of treatment she gained twelve pounds, and her appetite and color returned. It is now just a year since she was last hypnotised, during which time she has been absolutely free from the headache and the knocking. She is in excellent health, and there is no indication of nervousness or lack of self-control.

A CASE OF IMPERFORATE ANUS; INGUINAL COLOTOMY.[1]

By FRANCIS H. STUART, M.D.,
AND
J. C. BIERWIRTH, M.D.,
OF BROOKLYN, N. Y.

Anna May B. was born at the Low Maternity. Brooklyn Hospital, on June 4, 1895. Since the second day after birth the baby had shown signs of gastro-intestinal trouble, with restlessness, vomiting of food and bilious matter, and gradually increasing tympanites and marked abdominal distention. The superficial abdominal veins were very large and full. Only one stool had been reported since birth. A quarter of a grain of calomel, followed in half an hour by a dram of castor oil, was administered without result. The rectum was then examined and found to be occluded about one and one-quarter inches above the anus. A search with an ordinary probe did not reveal an opening. Examination per vaginam resulted negatively as far as presence of rectum was concerned, and inguinal colotomy was decided upon. A straight incision one and one-half inches long, parallel to and about one inch above Poupart's ligament, was made. On separating the peritoneum the upper part of the sigmoid flexure and a small mass which greatly resembled the appendix vermiformis appeared in the opening. The latter was pushed back, and the angles of the wound were closed with iron dyed silk sutures. The gut was attached to the edges of the wound with continuous sutures of the same material, and afterward incised. As soon as the gut was opened there was a discharge of gas and meconium in large amount, which greatly relieved the distention of the abdomen. The wound was dressed with iodoform gauze.

During the morning of June 8, four days after the operation, the adhesions and sutures gave away, causing the gut to be pushed out of the wound for about two and one-half inches. Anesthesia was produced, the gut was cleansed with a bichlorid solution 1 to 1000, the edges were freshened, and the angles of the wound closed, and the gut attached to the edges of the abdominal wound, fourteen interrupted catgut sutures being employed. Abdominal support of adhesive plaster was applied, and the wound dressed with sterilized gauze and aristol. The child rallied well.

On June 26, the baby was anesthetized for examination and with the view of possible operation. Upon introducing a bullet-probe through the artificial anus, the gut was found to extend about three-quarters of an inch below this opening and to end in a cul-de-sac. The probe could not be felt through the vagina, although this canal admitted the whole of the little finger. The lower pouch was found to have contracted since it was last examined (day of first operation), and measured about three-quarters of an inch in length. On these findings operation was deferred.

On June 30, the artificial anus was of such size as to admit the tip of the little finger, had fair contractile power, and was free from erosion and inflammation. Around it were a number of radiating suture-scars. The patient apparently had some power of retaining feces. August 12, being then two months of age, she was transferred to the surgical ward of the Brooklyn Hospital under the care of Dr. Bierwith.

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[1] Reported to the Kings County Medical Association, Brooklyn, May 14, 1896.

OPERATION BY DR. BIERWITH.

The patient was first seen by me on the first of September, and then presented the following conditions: At the site of the inguinal opening the colon was prolapsed and invaginated in two sections, the lower end about four inches and the upper end about two inches. There was an imperforate anus ending in a blind pouch about one and one-quarter inches in depth from the sphincter. The prolapsed and invaginated portion of the gut showed numerous small ulcerations, was much congested, and bled freely upon touch. The bowel could be reduced without difficulty.

The first operation for the relief of the imperforate anus was done October 15, 1895, chloroform being used as an anesthetic. The operation consisted in pulling down the blind pouch, securing it by two silk sutures outside, which were given to an assistant to hold, and opening it sufficiently to admit the little finger; then the invaginated lower portion of the gut was reduced into the abdomen and its blind end pushed by means of a large gum-elastic bougie toward the anal opening and likewise secured by two lateral silk sutures which were held by the assistant. Then the upper pouch was opened and by means of Lembert sutures united to the opening of the lower pouch. After this, the bowel was flushed from the inguinal opening down through the anus and was found to be entirely patent. Although there was considerable depression from the chloroform-narcosis, the child rallied well on the following day and had no rise of temperature. The bowel was washed through twice daily, and the child fed on easily digested food. October 21st, six days after the operation, the union was found to be perfect between the two ends of the gut, showing an annular constricting band about one inch from the sphincter. This was ordered dilated gently with a well lubricated finger once each day. The bowels continued to move through the inguinal opening.

On November 1st, the first operation to close the abdominal opening was done. I thought this might be accomplished by splitting the skin all around the opening, allowing the bowel to remain attached, and sewing the two parts separately (that is, approximating the edges of the gut), and then by deep sutures to bring the edges of the skin together. I adopted this procedure in order to avoid opening into the peritoneal cavity. On November 3d, the bowels moved per anum. During the night of November 4th the child had a continuous attack of coughing. In the morning some fecal matter was forced through the abdominal opening. November 5th, all the stitches had given away and there was again complete prolapse and invagination of the gut as before the operation. The failure of this operation was due primarily to the hard cartilaginous edges of the wound in which the stitches could not hold, and to the unfortunate severe attack of coughing.

On November 12th, I performed the second operation for the closure of the abdominal opening. This time I concluded to dissect the gut out and away from its cutaneous attachment, taking it outside of the abdomen, freeing it from all cicatricial tissue, and closing the opening transversely by Lembert sutures. This was done without difficulty. Next, the skin-wound was freed of as much of its cicatricial tissue as was possible and then united by deep and strong silk sutures. There had been so much loss of substance that the edges were approximated with the greatest difficulty and the sutures in places considerably constricted the tissues. The operation was of necessity a long one, occupying nearly two hours. The child reacted very poorly from the chloroform, and for several hours I was in doubt whether it could rally. On the following day, in the morning, the temperature rose to 103$\frac{2}{5}$° F., but in the evening of the same day it fell again to 99$\frac{1}{5}$° F. The child had rallied well from the operation, had a good pulse, and took nourishment fairly well. The morning elevation of temperature continued for several days (until the 16th), after which date it remained normal. On November 15th there was some sloughing around the edges of the wound at the points of the tight sutures. The bowels moved per anum for the first time two days after the operation and regularly every day after that. At no time was there any tympanitic distention. The skin wound finally healed by granulation at the places where the sloughing had taken place and the child made an uneventful recovery. The anus was dilated every day by the aid of the finger. The child passed from my observation after November 22d, and the history from that time until discharged, February 19th, is extremely meager. I was told by the house surgeon of the Brooklyn Hospital that considerable difficulty was experienced in finding a proper nourishment for the child, and I suggested modified cow's milk approximating as nearly as possible mother's milk. The child thrived very well on this and gained rapidly in flesh. Some time in the beginning of February, several small abscesses made their appearance, one of considerable size being on the scalp, which I lanced at my office on February 19th. The child was then in a very miserable condition, being poorly nourished, and white and pasty looking. She was readmitted to the hospital on February 28th, with a diagnosis of general furunculosis, and died from general marasmus on April 20th.

We were fortunate to obtain an autopsy on the case, which was performed by Dr. J. M. Van Cott, Jr., Pathologist to the Brooklyn Hospital. Aside from the general evidences of malnutrition in all the organs of the body, nothing abnormal was found except a fecal concretion about the size of a pigeon's egg in the sigmoid flexure. The gut was taken out in its entirety, leaving the skin around the anus attached, and also the skin which contained the scar of the former abdominal opening. The gut was firmly adherent to the abdominal wall at this point. There was hardly a trace of a scar left in the gut at the point where the opening was made for the inguinal colotomy, and notwithstanding the poor condition and sloughing of the skin wound of the colotomy, there was but a trace of the scar in the skin attached to the gut. The line of union and its still existing circular constricting band between the two pouches of the rectum was very clearly shown. I may remark in parenthesis that the fecal concretion found in the sigmoid flexure in no way interfered with the action of the child's bowels which moved two or three times daily after the last operation.

This case is of interest chiefly from the fact that it demonstrates the great tolerance of surgical interference in infants of such tender age. The child was operated upon several times by Dr. Stuart, and at my hands she underwent three capital operations and rallied well from all of them. The case is of further interest in that we are able to show this specimen six months after the first operation, demonstrating the wonderful healing and recuperative powers of infantile tissues.

HOSPITAL REPORTS.

TREATMENT OF TYPHOID FEVER AT THE NEW YORK HOSPITAL.

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THE Editor of the MEDICAL NEWS has asked me as one of the visiting physicians to the New York Hospital to explain in detail the treatment of typhoid fever employed there during the past year. In ninety cases admitted to the hospital from December 1, 1895, to December 1, 1896, mortality was reduced to less than ten per cent., the former average mortality in typhoid fever, as given by Murchison, being rated at from ten to thirty per cent. It is fair to assume that the rigid system of hydrotherapy, carried out according to the methods of Brand, is to a great extent responsible for these results. The line of treatment adopted may be considered, for better understanding, under certain general heads, as follows:

GENERAL MANAGEMENT.

The patient is confined to bed in a recumbent position and remains there until convalescence is established, never being allowed to sit up. His clothing, with the exception of a linen shirt, is removed. A sheet is used for covering, and in cold weather a blanket is added. The bed is of woven wire with a soft hair mattress covered by two thicknesses of blankets. Bed and body linen are changed daily. Whenever blankets, sheets, or rubber covers become soiled they are removed at once, a nurse and orderlies being in constant attendance. All sheets and other articles that have been in contact with the patient, before being sent to the laundry, are soaked for an hour in a 5-per-cent. carbolic acid solution. The feces as soon as passed are mixed with a 2-per-cent. solution of bichlorid of mercury and allowed to stand an hour. Separate glasses and dishes are set aside for all typhoid fever patients. The nurses and orderlies who give the baths are required to carefully wash their hands with soap, and then with a bichlorid of mercury solution, after serving the patient.

Mouth.—The distressing condition of the mouth and nasal passages, of which so many patients complain, is relieved by a mild solution of some aromatic antiseptic, such as tincture of myrrh, ʒi; sodium bicarb., gr. 20; water, ℥vi. For the dryness of the mouth, dilute phosphoric acid solution is used in many cases (ʒi of the acid to ℥viii of water). A spray of Dobell's solution is used for the nose, and adds much to the comfort of the patient.

Diet.—As soon as the patient is admitted to the hospital he is put upon a milk diet; ordinarily ℥viii of cold milk with a little water added is given every two hours when the patient is awake. Mutton or beef broth is substituted for the milk, three or four times a day. When there is nausea or vomiting, the milk is peptonized; if this fails to control the nausea, oxalate of cerium, gr. v, and bicarbonate of soda, gr. x, are added to each glass of milk. Sometimes pancreatin, gr. iii, and sodium bicarbonate, gr. x, are substituted for the above. In some cases, good results have been obtained by adding gr. v of bismuth to each glass of milk. Ordinary nausea will be controlled by following out these suggestions. If it should not, small doses of morphin or codein may be given. Sips of champagne in obstinate cases will give temporary relief. It is often necessary to reduce the quantity of food and give only one or two ounces every hour until the vomiting is controlled.

Stimulation.—When the condition of the pulse, and the dry tongue, indicate cardiac failure, stimulation is commenced. This often is not until the end of the second week. Many cases pass through the whole course of the disease without any stimulation. When necessary the amount of whisky is increased until from eight to twelve ounces is taken during twenty-four hours. This is generally administered every three hours in ½-ounce doses, diluted with water. Whisky is the only form of alcohol generally used, and when necessary, it is supplemented by sulphate of strychnin in $\frac{1}{30}$ grain doses, ordinarily once in four hours.

TREATMENT OF FEVER.

The routine antipyretic treatment consists in the giving of tub baths. The temperature of the patient is taken every three hours, with the exception of the hours nearest midnight, when it is usually omitted if the patient is asleep. A tub bath of ten minutes' duration is given whenever the temperature reaches 103° F., or above. The water for the first bath is at a temperature of 80° F., for the second 75° F., and for the other baths 70° F.

The patient is lifted by two or more orderlies into the bath, the head being supported while in the bath by a rest which is usually a piece of bandage spread across the tub. The patient's ears are closed with cotton, and while in the bath, ice-water is frequently poured over the head. Two attendants rub the patient gently over his entire body while in the bath. As soon as he is lifted out, and placed upon the bed, which has been freshly made, the patient is wrapped in a sheet and thoroughly dried; this sheet is then drawn aside and he is covered with one or two blankets, and hot-water bottles are placed at his feet.

He is left with just enough bed-clothing to keep him from feeling cold. Fifteen minutes before the bath half an ounce of whisky is given, and after the bath a glass of hot milk. Half an hour after the bath, temperature, pulse, and respiration are taken and recorded upon a chart. In mild cases (temperature below 103° F.), no attempt is made to reduce the temperature, but sometimes alcohol sponge-baths are given for their quieting effect. The tub-baths are are discontinued only under the following circumstances: (1) When hemorrhage, no matter how slight, occurs from the bowels; (2) when peritonitis develops; and (3) when, in exceptional cases, the tub-baths do not seem to act well, either on account of the poor reaction of the patient, as shown by the pulse and the capillary circulation, or on account of their nervous effect, the dread of the baths being apparently so real in some cases that any benefit to be derived is questionable. Neither bronchitis nor pneumonia are contra-indications for the use of the bath. When the baths are stopped a rubber coil, through which ice-water constantly passes, is kept upon the abdomen. When it is necessary to use the coil, I have personally found that five grains of antefebrin, four or five times a day, will keep the temperature much lower than when the coil is used alone.

The benefits noticed from the use of the baths are: (1) Reduction of the fever; (2) slowing of the pulse, and an improvement in its quality; (3) quieting of the patient and the lessening of insomnia (the patient generally falls asleep immediately after the bath); (4) improvement in mental condition (delirium) and lessening of muscular twitchings.

TREATMENT OF SPECIAL SYMPTOMS.

Tympanites.—When this becomes distressing the diet is modified according to the suggestions given in the treatment of nausea and vomiting. Often when beef-juice is substituted for milk the abdominal distension will become less. Turpentine stupes are applied to the abdomen, and turpentine is given in 10-drop doses in capsules. When the larger bowels are distended with gas, a rectal tube is inserted from eight to eighteen inches and left in the bowel from half an hour to an hour. This is done three or four times a day.

Diarrhea.—It is not necessary to interfere with a moderate diarrhea, but when it becomes severe, and the patient is having more than four movements daily, the quantity of milk is first reduced so that the patient receives from 4 to 6 ounces every two hours. If this does not relieve the condition, subnitrate of bismuth is given, 10 or more grains per day. The bismuth alone will generally control the diarrhea, but if it does not, Dover's powders may be added.

Constipation.—Only during the first ten days of the disease will constipation be relieved by medicine, and then calomel is given in $\frac{1}{10}$ grain doses every hour until a grain has been taken. If this does not act, Rochelle salts are given the following morning. Later in the course of the disease glycerin suppositories and enemata are relied upon to control the condition.

Nervous symptoms.—In cases treated by cold baths, nervous symptoms are never a marked phenomenon, and sedatives are rarely needed. For the severe headache which occurs early in the disease, citrate of caffein, gr. 1, and acetanilid, gr. i to iv, in tablets, one every four to six hours, is given, and for restlessness at night, and insomnia, 5 grains of Dover's powder, repeated at the end of two hours, or trional, 10 to 20 grains at a dose, repeated if necessary.

TREATMENT OF COMPLICATIONS.

Hemorrhage.—If intestinal hemorrhage occurs, no matter how slight, all baths are at once discontinued, and the cold coil applied to the abdomen instead. The patient is kept absolutely still, and is not even turned on his side or moved in bed. At once $\frac{1}{8}$ to $\frac{1}{3}$ of a grain of morphin is given hypodermically, and then, for a day or two, $\frac{1}{4}$ to $\frac{1}{3}$ of a grain of opium is administered by the mouth every three or four hours. When the quantity of blood is excessive, and there is danger of heart failure, enemata of normal saline solution are given, a quart or two at a time, and these are repeated every four hours.

Peritonitis.—When peritonitis is due to perforation every patient has died within twenty-four hours. In one who recovered it is fair to assume that peritonitis was due to extension of inflammation from the intestinal ulcers, and was in every respect a local involvement. This patient was kept in a state of semi-narcosis by hypodermics of morphin for nearly a week, and at the same time turpentine stupes were kept constantly on the abdomen.

Bed Sores.—These rarely develop. Scrupulous cleanliness is the principal means employed to prevent them. The posterior part of the patient's body is carefully bathed three or four times a day with alcohol, and then dusted with a powder consisting of equal parts of starch and oxid of zinc. Sometimes bismuth has replaced the oxid of zinc. If the bed sores threaten to occur, an air cushion is used, or the patient is transferred to a water bed. When bed sores actually develop, they are dressed with iodoform, after irrigation with bichlorid of mercury (1 to 2000), or peroxid of hydrogen. This is done from one to three times a day.

Phlebitis.—This is treated by absolute rest and elevation of the limb. At first when the pain is intense the limb is enveloped in oakum, wrung out in hot water. Later, pressure is made on the limb by bandaging it with cotton bandages; often it is necessary for the patient to wear elastic rubber bandages for months after convalescence, to prevent swelling and pain in the limb.

Pulmonary Congestion.—When evidence of congestion appears an oiled-silk flannel jacket is at once applied to the chest. The patient is propped on his side, and, if indicated, the stimulation is increased. If a bronchitis of the smaller tubes develops, the application of dry cups to the chest, and the internal administration of carbonate of ammonia is resorted to. When inflammatory enlargement of the glands occurs, a dressing of a ten per cent. solution of carbolic acid is at once applied. As soon as abscesses form they are opened and drained. Satisfactory results have been obtained in some cases by aspirating the abscess, injecting with peroxid of hydrogen, and then allowing a ten per cent. mixture of iodoform and glycerin to remain in the abscess cavity.

RELAPSES.

Of the ninety cases under treatment, relapses occurred in five, or about five per cent. The percentages of relapses, given by different observers, ranges from three to fifteen per cent. In none of these did death occur. In each instance the fever was as high as in the original attack, but was of much shorter duration. The treatment employed was exactly the same as in the first attack, the baths being resorted to at once.

MANAGEMENT OF CONVALESCENCE.

The importance of attention to certain details during this stage of recovery cannot be overestimated. The question of food is the first one to be met. After the subsidence of fever, the patient quickly develops a ravenous appetite, and often begs piteously for a fuller diet. Solid food is never given before the seventh day after a normal temperature has been reached, and generally not until the tenth day. Dr. George Peabody, one of the visiting physicians, makes an exception to this rule and allows solid food as soon after the subsidence of fever as the patient desires it. A scraped beef sandwich, rice, or some other cereal are the first articles given, and these are very cautiously added to. The patient is not allowed to sit up until ten or fourteen days with normal temperature have passed, and never, if possible to prevent it, are friends admitted before the end of the first week of normal temperature. Many relapses have been traced to the excitement attending the visit of friends. In my opinion, this is one of the most important dangers against which to guard. The period of sitting up may be prolonged with the gradual return of strength. After four or five days, the patient is allowed to move about slowly, and then (by the end of a week), when the weather is fine, to take a short drive in the open air. Constipation during convalescence is treated by enemata. Upon the occurrence of diarrhea, the patient is kept in bed and the diet is restricted to milk for a few days. If this does not control it, bismuth is given. The distressing neuritis which often develops during convalescence is treated by wrapping cotton around the limb involved, in order to protect it from changes of temperature. Sometimes counter-irritation is applied by iodin, and a galvanic current given daily for ten minutes. In these cases strychnin is given, one-thirtieth of a grain after meals, until the neuritis disappears.

I am indebted to Dr. Williams, house physician of the New York Hospital, for the interest he has taken in the cases and for his assistance in the preparation of these statistics.

MEDICAL PROGRESS.

Tuberculous Esophagitis Secondary to Peribronchial Tuberculosis.—DANEL (*Journal des Sciences Médicales de Lille*, 1896, No. 22, p. 530) has reported the case of a woman, seventy-six years old, concerning whom little information could be gained, but who presented signs of pulmonary tuberculosis and bronchopneumonia inferiorly on the left. There were, besides, in the submaxillary region, on each side, several areas of superficial ulceration. Death resulting, *post-mortem* examination disclosed in addition to the accuracy of the clinical diagnosis the existence of ulceration of the mucous membrane of the posterior wall of the esophagus for a distance of nearly four inches. The floor of the ulcerated area was excavated, eroded, and of reddish hue, and at its margins and beyond numerous miliary granulations could be seen. Similar granulations in smaller number were present also on the anterior wall of the esophagus, the involvement of which extended almost as high as the pharynx. At the point where the esophagus crossed the right bronchus on its way from the trachea was a circular opening more than a third of an inch in diameter, establishing a channel of communication between the esophagus and a broken-down peribronchial gland. The stomach was dilated and slate-colored and contained a number of granulations, probably tuberculous. The intestine appeared to be free. The glands of the neck were enlarged, some being indurated and some softened.

Successful Gastro-Anastomosis for the Relief of Hour-Glass Contraction of the Stomach.—LAUENSTEIN (*Münchener Medicinische Wochenschrift*, 1896, No. 21, p. 491) reports the case of a woman, forty-three years old, who presented various symptoms of gastric derangement for a number of years, including vomiting, cardialgia, constipation, emaciation, and hematemesis. No physical evidences of disease could be detected, and examination with the tube disclosed signs of reduction in the size of the stomach. Operation was decided upon and when the stomach was exposed, after a median incision, an hour-glass deformity of this viscus was found. The lesser curvature was adherent to the under surface of the liver, and the constriction existed at this point. Communication was established between the two saccules by first suturing the peritoneal layer of the opposed surfaces posteriorly, then incising the seromuscular layer and suturing, and finally treating the mucous layer in the same manner. The opening was entirely closed by pursuing the same course anteriorly. Improvement at once resulted, with gain in weight and relief from previous symptoms. In a diagnostic way hour-glass contraction of the stomach is to be recognized by signs of diminution in the size of the stomach, *viz.*, distress after ingestion of small amounts of food or drink and intolerance of the usual quantity of fluid through the tube; the persistence of succussion-phenomena after apparent emptying of the stomach; the sudden appearance of gastric contents through the tube after the water returned in irrigation has been clear; and the evacuation of less water through the tube than was introduced.

Albuminuria during Pregnancy, Labor, and the Puerperium, and its Relation to Eclampsia.—As the outcome of a clinical investigation, conducted at the Institute for Midwives at Breslau, SAFT (*Archiv für Gynäcologie*, B. 51, H. 2, p. 207) found albuminuria present in 5.41 per cent.

cases of pregnant women, appearing in the second half of pregnancy, and increasing in frequency toward the close. The proportion of albumin present in the urine may reach a considerable degree several weeks before the termination of the gravidity. The frequency of albuminuria is greater among primigravida (5.9 per cent.), than among multigravida (4.1 per cent.). The degree of albuminuria during labor corresponds in general with the amount of albumin present in the urine during pregnancy. The frequency of albuminuria during parturition, as well as the degree, is greater among primiparæ (32.08 per cent.) than among multiparæ (22.6 per cent.). The albuminuria disappears generally during the first days of the puerperium, and only exceptionally is protracted over a longer period. This period is longer among primiparæ than among multiparæ. The renal lesion following pregnancy is more intense among the former than among the latter. The presence of white and red blood corpuscles in the urine of pregnant women free from albuminuria is attributable to lesions of the bladder. Tube-casts were found in the urine of pregnant and parturient women only in association with albumin. The appearance of tube-casts under such circumstances is independent of the amount of albumin, and their presence is without influence upon the duration of the albuminuria. Pregnancies and labors in cases of twins and hydramnios favor the occurrence of albuminuria. The contracted pelvis favors the occurrence of albuminuria in primiparæ, during pregnancy as well as during labor; in the case of multiparæ only during labor. Albuminuria is frequently the cause of premature labor. The kidney of pregnancy represents a condition due solely to pregnancy, never giving rise to pronounced disturbance to the general condition, and disappearing rapidly during the puerperium. It is thus in no way related to true nephritis. The pathologic-anatomic alterations of the kidney of pregnancy are essentially degenerative in character. The prognosis of the uncomplicated kidney of pregnancy is favorable; the danger of transition to chronic nephritis is insignificant. On the other hand, the prognosis of the kidney of pregnancy, attended by complications (such as nephritits or cardiac disorder), is dubious. The cause of the kidney of pregnancy is probably an auto-intoxication of the organism through some product of tissue-metamorphosis, which probably induces also the so-called molimina graviditatis and various nerve irritations. During parturition a new injurious factor is added in consequence of the muscular strain. In the presence of an excess of this poisonous product eclampsia results. The changes in the kidneys, liver, and other organs, are secondary to the eclampsia.

THERAPEUTIC NOTES.

A Better Method of Administering Castor-oil.—In the *Rev. de Therapeut. Médico-Chir.*, November 1, 1896, KLEIN mentions a method of overcoming the bad taste of castor-oil by simply warming it in a glass of milk and shaking it to an emulsion. The bad taste disappears and, owing to its finely divided condition, it acts more energetically, so that a smaller dose suffices, a half-ounce purging most adults. A small amount of sirup of bitter orange may be added if a flavor to the dose is desired.

Formaldehyde in Combination with Starch and Casein.—Formaldehyde vapor acting upon gelatin produces a substance called formalin-gelatin, the antiseptic action of which, in the treatment of infected wounds, has already been commented upon. Similar preparations, in which the substances affected by the formaldehyde vapor are starch and casein, have been the subjects of experiments. Like formalin-gelatin, they possess a mild antiseptic action, and tend to diminish pus-formation. BOHL reports in the *München. Med. Woch.*, No. 38, 1896, his experience with formaldehyde-casein.

A Contribution to the Study of Mixed Anesthetics.—LANGLOIS and MAURANGE (*Bulletin de l'Academie de Médicine*, No. 42, 1896), from observation of 350 cases, conclude that:

1. The combination of morphin and spartein, administered subcutaneously, stimulates and regulates the cardiac contractions.
2. After such injection narcosis is rapidly accomplished and easily maintained, with a minimum of anesthetic, for at least one hour,
3. In cases anesthetized for two hours or longer, although respiration becomes enfeebled, the heart-action continues forcible.

A Clinical Report on Analgene.—In the *Bull. de l'Academié de Méd. de Paris*, November 10, 1896, MONGORVO of Rio Janeiro presents the results of his experiments upon children with the new coal-tar product, analgene (ortho-ethoxy-anamonobenzoyl-amido-quinolin), obtained by Vis of Freiburg. It is claimed that this remedy possesses the analgesic, antithermic and sedative properties of antipyrin, thallin, phenacetin, antifebrin, etc., with none of their disagreeable and sometimes dangerous effects.

Mongorvo used the drug exclusively among children, and reports fifty-nine cases, thirty-three being various manifestations of malarial poisoning. Of these latter, the ages of the patients ranged from twenty days to thirteen years. The dosage varied from 25 centigrams to 3 grams in twenty-four hours. In no case did he observe the slightest unfavorable action upon the respiration or circulation. When large doses were given for some time the urine became colored a deep yellow or red, but albumin or sugar was never present. Its action in the malarial cases was prompt and efficient, reducing the temperature and shortening the period of the disease.

The twenty-six other cases comprised tuberculosis, lymphangitis, arthrosynovitis, parotiditis, Potts' disease, hip disease, epilepsy, hysteria, chorea, otalgia, herpes zoster, urticaria, and painful tumor of the liver. In all these the remedy acted well in reducing high temperature, when present, and allaying pain. It also influenced favorably the nervous phenomena present in the cases of hysteria, chorea, and epilepsy. The drug is soluble in slightly acidulated water and, as it has no taste, is well adapted for administration to children.

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SATURDAY, JANUARY 30, 1897.

INSPECTION OF THE NEW YORK CITY SCHOOLS.

THE Board of Health of New York city is a model institution. In times of threatened epidemic it has risen to the occasion in such a way as to compel the admiration of every citizen whose health it aims to guard. The result is that no serious epidemic has for a long time been allowed to develop or prevail in territory over which it has jurisdiction. That it is ever on the alert to coöperate with the physician in combating infectious disease when it does exist is shown by its recent attitude on the subject of the serum diagnosis of typhoid fever.

Recently it has proposed a plan for the more prompt recognition and more effectual prevention of the common infectious diseases of children, particularly diphtheria, scarlatina, and measles. The plan is to have the children of the public and parochial schools inspected daily by a corps of physicians appointed and salaried for that purpose. To accomplish this the annual sum of $47,500 has been granted by the Board of Apportionment.

It is a fact apparent to every practising physician that the centers for the dissemination of the communicable diseases are the public schools and the public dispensaries, one being equally iniquitous with the other. The proof recently furnished by the report of a member of the Board of Health staff who was detailed to investigate the subject of the spread of disease by the public schools, is corroborated by the experience of every physician who is called upon to treat the children attending these institutions. In this report it is shown that it has been no uncommon experience to find that children absent from school had scarlatina, measles, or diphtheria, while other children of the same family continued to go to school and thus jeopardized the life of every person who breathed the same air with them in the school room. Although it is a fact that there exists a law to the effect that all communicable diseases shall be reported to the Bureau of Statistics for Contagious Diseases, and that immediately thereon measures shall be adopted by the Board of Health to prevent the spread of the disease, and that this law is actively and beneficially enforced, everyone knows that at least one-third to one-half of all the cases of these three diseases—measles, scarlatina, and diphtheria—are allowed to run their course without the aid or attention of a physician. In many other cases the services of a physician are not sought until the patient is *in extremis*, and even then the child is often taken to a dispensary.

Since the serum treatment of diphtheria has become so universal, and since cultures for the early diagnosis of the disease have become the rule, the fact that many cases of genuine diphtheria formerly passed as tonsillitis, pharyngitis, catarrhal sore throat, and the like, cannot be gainsaid. It is to these and similar cases that we owe the spread of so much diphtheria and scarlatina by the public schools, and it is these cases particularly that the corps of physicians which it is proposed to appoint would combat, and in a measure prevent. We are sure that the immediate result of the expenditure of this insignificant sum of money will be to materially lower the death-rate.

THE FATE OF CHARLATANS IN GERMANY.

THERE are times and places in which charlatanism is not all profit. The writer of an article which appeared in the *Journal de Médicine* of Paris, December 20, 1896, laments the fact that if a charlatan is brought to trial in France he is either acquitted or escapes with a fine of 15 francs ($3).

It is somewhat different in Germany. A certain Volbeding of Dusseldorff, who styled himself a homeopathist, by advertising in more than six hundred newspapers in Germany and elsewhere, worked up a business estimated to be worth $40,000 a year. He treated patients by correspondence, and employed a small army of clerks, without medical knowledge, to answer the several hundred letters he daily received; and they, in his absence, prescribed the treatment. The medicines he used were few and simple, and were prepared in his laboratory by other clerks who knew nothing of pharmacy. He "cured" nearly everything and regulated his charges according to the social status of his victims. In the front of his establishment he kept a neat little drug-store to conceal the business which was done in the rear. Moreover, he himself was a regularly graduated physician. In spite of all these precautions he was arrested and sentenced to four years and a month imprisonment, to five years' loss of civil rights, and to pay $1500 fine. Pending his trial he deposited $50,000 as bail, but, unfortunately for him, he did not obtain even temporary liberty, as the tax collector accused him of having committed fraud in the avoidance of taxes upon his revenue. The officer therefore confiscated the whole sum, and Mr. Volbeding remained in jail.

ECHOES AND NEWS.

Roentgen-ray Experiments.—The Prussian Government is reported to have appropriated $12,000 for Röntgen-ray experiments during the current year.

Memorial of Baron Hirsch.—The widow of Baron Hirsch has presented the Pasteur Institute in Paris with 2,000,000 francs as a memorial of her late husband.

A National Laboratory.—Great Britain is now seriously considering the advisability of establishing a National Laboratory of Natural Sciences, in which all her scientific associations will take an interest.

Epidemic Diseases in Paris.—During the period between 1877 and 1881, the death-rate in Paris from preventable epidemic diseases was one in every ten. This was reduced during the years 1892–1896 to one in eighteen.

Following the New York Health Board.—Health Commissioner Starkloff will, at the next meeting of the St. Louis Board of Health, recommend that pulmonary tuberculosis be declared infectious, as has been done in New York City.

Temples of Esculapius.—Recent excavations at Epidaurus and Athens have opened to modern eyes the temples of Esculapius, and the ruins are found to bear much valuable evidence regarding the methods of ancient medicine.

Concert for the Post-Graduate Hospital.—A successful concert was given recently by Mr. Seidl and his Metropolitan Orchestra at Carnegie Hall for the benefit of the New York Post-Graduate Hospital. Mme. Gadski and Mr. Emil Fischer rendered the special numbers of the program.

Lung Troubles in Chicago.—Since the first day of the present month, pneumonia and other pulmonary troubles have been increasing in Chicago, and it is feared that pneumonia may become epidemic. In December, 1896, there were 147 deaths due to that disease. Thus far in January it has claimed 167 victims.

Lord Lister.—Sir Joseph Lister has communicated his intention of retaining the name Lister in the title he will assume when elevated to the peerage. It is a source of gratification to his medical friends and admirers to learn that he will not abandon the name he has rendered renowned and so universally revered.

A Medical Strike.—The physicians attached to the night service in a certain densely inhabited quarter of Paris have all resigned. Applications customarily made to the police for medical relief are now refused in most instances. The difference has arisen concerning the remuneration. To one at this distance the sum in question is a paltry one, but a principle of no small importance may be involved.

Famine in Rhodesia.—Reports have been received from Cape Town that famine exists in Rhodesia. Thousands of emaciated native women besiege the native office at Buluwayo, clamoring for food. The natives are flocking to Buluwayo and are exhuming the carcasses of cattle which died from rinderpest. They devour these, and, as a consequence, a terrible mortality prevails among them.

Changes in the Medical Staff of the Woman's Hospital of New York.—The Medical Board of this hospital has decided that it is for the best interests of the institution that the Assistant Staff should be reduced in number. Accordingly the edict has gone forth that each visiting surgeon, instead of having two assistants, shall hereafter have but one, and five members of the Assistant Staff have been dismissed.

Tri-State Medical Society of Iowa, Illinois, and Missouri.—The fifth annual meeting of this Society will occur in St. Louis, April 6, 7, and 8, 1897. Dr. Joseph Price of Philadelphia will hold the Surgical Clinic, Dr. James T. Whittaker of Cincinnati the Medical Clinic, and Dr. Dudley Reynolds the Ophthalmic Clinic. Dr. G. Frank Lydston of Chicago will entertain the members with an original story during one of the evening sessions.

Air and Exercise for Consumptives.—At the recent discussion on phthisis before the New York Academy of Medicine, Dr. Trudeau asserted that exercise was not so desirable in the case of a phthisical patient as was generally supposed, the slightest excess, indeed, being injurious and working with surprising rapidity against the ability of the sufferer to resist the disease. He insisted, however, on the greatest amount of exposure to the outside air, even in inclement weather and at low temperatures.

The Albany Medical College Alumni Association.—The second annual banquet of this organization was held at the Hotel Savoy in New York, January 21, 1897. Dr. Wm. H. Thomson, the president of the Society, welcomed the guests in a most interesting and delightful way. Among other enjoyable features of the evening was the amusing and graphic description by Dr. Kimball (now detailed at Governor's Island) of his medical and surgical experiences upon the western frontiers, especially among the Indians.

Appropriation to Protect New York Against the Bubonic Plague.—Health Officer Doty of the Port of New York made a personal appeal to the legislature in Albany last week for an appropriation of five or six thousand dollars to be used in extending his present disinfecting plants. The existing facilities are quite sufficient to care for all suspicious mail, but within the next few weeks it may become necessary to deal with infected vessels. To prepare for this is part of an efficient service such as Dr. Doty is sparing no pains to render.

Pursuing Quack Doctors.—The New York County Medical Society is after the unregistered doctors and quacks who are practising medicine without a license. Since the law providing for the criminal prosecution of the quacks was reënacted in April, 1895, the Society has caused the arrest of eighty-three persons for practising illegally in the county, and has obtained convictions in fifty-one cases. These persons have paid $3,690 in fines, and in addition a number of them have been sent to jail. The legal department of the society has a large number of cases still pending.

The Board of Health Sustained.—In an action brought by the New York Board of Health in the Supreme Court to compel the removal of certain rear tenements in Mott street, the referee filed his report this week. In this he sustained the action of the Board of Health in every particular. As this case was generally accepted as a test of the validity of the Act of 1895, upon it will hinge the destruction of more than fifty of these vile pest-holes of moral and physical degradation. The final approval of the judge it is hoped will forever set a seal upon the existence of rear tenements in New York City.

Spitting in Public Conveyances.—Placards carrying the full text of an act of the New York Board of Health against expectoration in public places, including street and elevated cars, have been displayed in conspicuous positions in the same for almost a year, but still the vile, disgusting, and dangerous practice persists with little abatement. The police authorities are now being directed to look to its enforcement. The conductors and station masters have apparently come to regard it as a dead letter, and it is quite as important that their minds should be relieved of this false impression as that the public violators should be brought to justice.

A Nun Doctor.—Many Roman Catholic Sisters are more or less skilled in the practice of medicine, and the nursing of the sick is, very appropriately, among their most frequent benevolent vocations; but it is by no means usual to find one who has fulfilled the legal requirements necessary to allow her to write M.D. after her name. Sister Raphael, an inmate of a convent in Kalamazoo, Mich., is an exception. She graduated from one of the best Philadelphia colleges, and afterward joined the religious order of the Sisters of St. Joseph. In a well-appointed office in the convent she attends to a regular office practice, both medical and surgical, and is highly esteemed by her professional neighbors.

Serum Treatment of the Bubonic Plague.—Dr. Yersin has so conclusively demonstrated the efficacy of the serum treatment of this infectious disease in India that he has begun the manufacture of the serum on a large scale. He has inoculated 100 horses, in which he is developing the antitoxin as rapidly as possible for use not only as a specific against the disease, but also as a prophylactic. At present he has at his disposal the serum from a single horse. With this he has inoculated twenty-seven patients sick with the plague, of whom twenty-three have recovered. When his present plans are perfected, he will have sufficient serum to inoculate 18,000 persons every month.

Disinfected the Mail.—Nine sacks of mail from India came into New York Harbor last week and were taken off the steamer at Quarantine for disinfection. It is the first batch received since the rule went into effect for special precautions, in view of the bubonic plague that is devastating Bombay and the far East. Dry heat is the main reliance for killing any lurking microbes. Chambers have been provided on the new quarantine boat, where treatment can be given by heat, steam, formalin, or bichlorid of mercury. Formalin is a saturated solution of formaldehyde, a deadly gas derived from methyl-alcohol. When the solution is poured out, the gas is set free and seems to penetrate everything. A heat of 230° F., however, is considered absolutely sufficient to kill any germ.

Localizing the Seat of Memory in the Brain.—Professor Edniger of Frankfort-on-Main is collecting evidence to determine the question: Do fish possess the faculty of memory? The Professor maintains that it is accepted that fish do possess a certain degree of memory; that they recognize persons, know which places to frequent and which to avoid, according to the experience they have gained; and that having once been caught by a hook, they recognize it when they see one again. It has generally been held that the seat of memory is in the gray matter of the brain. Fish have no gray matter whatever. If, therefore, it can be proved that they collect their experiences and utilize them afterward, it will throw doubt upon the exclusive claim of gray matter to the seat of memory.

CORRESPONDENCE.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

ELECTION OF OFFICERS OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY—MEETING OF THE SECTION OF OPHTHALMOLOGY OF THE COLLEGE OF PHYSICIANS—MEETING OF THE MUTUAL AID ASSOCIATION OF THE COUNTY MEDICAL SOCIETY—ON THE ALERT TO AVOID THE PLAGUE—VISIT OF PROMINENT PENNSYLVANIANS TO INSPECT THE WORKINGS OF THE NEW YORK HOSPITAL FOR THE CRIMINAL INSANE—ANNEX TO THE MUNICIPAL HOSPITAL—DR. SPEAR APPOINTED SURGEON TO THE SCHOOLSHIP "SARATOGA"—MEETING OF THE GYNECOLOGICAL SECTION OF THE COLLEGE OF PHYSICIANS.

January 24, 1897.

AT a business meeting of the Philadelphia County Medical Society, held January 20th, the following officers were elected: President, Dr. James Tyson; first vice-president, Dr. Edward Jackson; second vice-president, Dr. S. Solis-Cohen; Secretary, Dr. John Lindsay; assistant secretary, Dr. Edward R. Kirby; treasurer, Dr. Collier L. Bower; censor, Dr. W. Joseph Hearn. Delegates to the American Medical Association and to the State Medical Society were also chosen.

At a meeting of the Section of Ophthalmology of the College of Physicians, on January 19th, Dr. Clarence A. Veasey, by invitation, read a paper on "Binasal Hemianopsia." Dr. G. Oram Ring reported a case of foreign body in the vitreous diagnosticated by aid of the Röntgen ray. Some instances of magnet extraction of steel from the vitreous were related by Dr. Edward Jackson. Dr. F. M. Perkins exhibited a case of unilateral congenital microöphthalmos. A paper treating of traumatic ectropion uveæ and also of syphilitic tarsitis was contributed by Dr. George E. de Schweinitz. A patient with cilia in the anterior chamber was presented by Dr. George C. Harlan. Dr. Charles A. Oliver read a paper on the primary effects of an operation for cicatricial ectropion, exhibiting two patients, and a third illustrating rupture of the retina in retinal detachment.

A special meeting of the Mutual Aid Association of the Philadelphia County Medical Society was held on the evening of January 23d, to consider methods of increasing the permanent fund and adding to the membership of the organization. The Association consists of members of the Philadelphia County Medical Society, and its purpose is to give pecuniary assistance to the widows and children of physicians who have left no estate. It was founded in 1878, largely through the efforts of the late Professor Henry H. Smith, of the University of Pennsylvania.

At the weekly meeting of the Board of Health, held Wednesday, January 20th, Dr. William H. Ford was appointed a committee of one to confer with the secretary of the State Board of Health and the quarantine physician on the subject of the bubonic plague, with a view of preventing the possibility of its entry into this port.

The New York Hospital for the Criminal Insane at Matteawan was visited yesterday by Judge Gordon and a delegation of about thirty prominent Pennsylvanians. Among the number were Dr. Thomas G. Morton, former member of the State Lunacy Commission; Dr. William S. Janney; Dr. Francis X. Dercum; Dr. John C. Chapin, superintendent of the Pennsylvania Hospital for the Insane; Dr. D. E. Hughes, of the Insane Department of the Philadelphia Hospital; Mayor Warwick; Judge Arnold; Henry M. Deckert, president of the Wernersville Insane Hospital; Albert R. Harris, Eugene Raymond, and William F. Santly, of the House of Representatives; and General J. P. S. Gobin, Senator from Lebanon County. This visit of inspection is the result of the investigation recently ordered by Judge Gordon into the mental condition of certain convicts confined in the Eastern Penitentiary, this city, and it is to be hoped that it will ultimately result in the establishment in this state of a hospital fitted for the accommodation and treatment of the criminal insane.

An annex to the diphtheria pavilion and an administration building for the Municipal Hospital of Philadelphia have just been completed, and were thrown open for inspection during the past week. The new pavilion leaves nothing to be desired from the standpoint of ventilation, the air being continually changed by a system of electric fans.

Dr. Raymond Spear of Norristown, Pa., has recently been appointed surgeon to the schoolship "Saratoga" during her coming cruise. This position is generally filled by an officer of the U. S. Naval Medical Corps. Because of the number of men-of-war going into commission, none of the regular corps was available for the "Saratoga," and a civilian was of necessity detailed to the post.

At a meeting of the Section of Gynecology of the College of Physicians, held January 21st, Dr. Charles P. Noble read a paper entitled "A New Method of Suturing the Abdominal Wound in Celiotomy." Dr. Richard C. Norris read a paper on "The Necessity for an Early Inspection of the Vagina in Puerperal Sepsis." The discussion of Dr. Norris' paper agreed in the main with his views, differing only in matters of detail as to treatment, etc. Dr. E. E. Montgomery suggested the use of streptococcus antitoxin serum when infection of this type was suspected.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

NATURE OF THE CONTAGION AND THE ORIGIN OF INFECTIOUS DISEASES—THE ROENTGEN-RAY IN THE DIAGNOSIS OF PULMONARY CONSOLIDATION—ACQUIRED AND HEREDITARY SYPHILIS IN THE SAME INDIVIDUAL.

KELSCH read a paper on *contagion and the origin of infectious diseases* before the Academy of Medicine, December 22, 1896. The propagation of infectious diseases capable of becoming epidemic is attributed to direct contagion, each attack presupposing a similar attack in another person. Though this is true of certain diseases (more particularly of eruptive fevers), it does not hold good for the most important group of epidemic infections.

These not only develop through contagion, but also in many cases where they do not previously exist. This statement is true of typhoid fever, cholera, diphtheria, and epidemic influenza. There is no doubt that typhoid fever may break out suddenly in places where it had not existed within human memory; where no typhoid fever patients had arrived from other places, and where no influence from other typhoidgenic foci in the neighborhood could make itself felt. These facts prove that typhoid fever may arise, not indeed spontaneously, but from agents, either inside or outside of our organism, which are ordinarily inoffensive.

The history of cholera is likewise full of sporadic and epidemic cases in which the ubiquity and simultaneousness of the attacks defy any attempts to connect them, while it is evident to any unprejudiced observer that they have originated on the spot. This idea has recently received bacteriologic confirmation by the proof that there almost invariably exist in sewage and other waters vibrios representing all the characteristics of the cholera vibrios, but without their virulence. Experiments have shown that they may acquire virulent properties by changes in the chemic and biologic composition of the medium in which they live. In explaining the epidemics of influenza it is necessary to introduce these two etiologic elements, namely, contagion and autochthonous development; for we frequently meet with local epidemics with individual cases occurring simultaneously in widely separated places and under conditions which argue against the probability of the transport of a morbid germ by human beings or by atmospheric currents. A similar statement holds true of diphtheria. And, indeed, there is nothing mysterious about these facts since we know that Loeffler's bacillus is normally present in the mouth of many persons, as is also the pneumococcus and streptococcus, and that it is capable of acquiring an unusual virulence under the influence of undetermined causes. Therefore, while infectious diseases are transmissible by contagion, like virulent diseases properly so-called, they are not exclusively contagious like the latter. Hence the name infecto-contagious, by which they were formerly known.

Another interesting feature of infectious diseases is brought out by the study of their course during a number of years. A virulent period of smallpox recurs on an average every eight or ten years; of measles every three or six years; and of scarlet fever at longer and more irregular intervals. It is clearly indicated that the contagious agent of these diseases undergoes in the course of time unceasing variations, its ascerbation and attentuation alternating with greater or less regularity. Proofs of this theory are also not lacking in the history of those parasitic diseases which are capable of becoming epidemic. Alopecia areata has been endemic among the firemen in Paris for nearly ten years. During this time there have been two epidemic periods, one in 1888 and the other in 1893. The most careful investigation failed to reveal the cause of this sudden extension of the disease. The only conceivable explanation is that the infected agent in some unknown way acquired an unusual energy. The search for various cosmic, telluric, hygienic, and other influences, which cause germs, ordinarily harmless, to take on virulent functions is of as great importance as the search for the origin of the contagion itself.

BOUCHARD recently called the attention of the Academy of Sciences to the arrest of the Röntgen ray by pleural effusions. At the session held December 14, 1896, he reported that even slight condensation of the pulmonary tissue at the apex of the lung will cast a dark shadow. By examination of a number of tuberculous patients with the aid of the fluorescent screen, it was determined that the pulmonary lesions threw shadows which corresponded exactly with the area of consolidation as revealed by other means of physical examination. In two cases, light spots within the dark area revealed cavities, the existence of which was proved by auscultation. In other cases in which cavities were made out by auscultation, no light spots were seen in the shadow.

In a communication on the *regulation of the intrabronchial pressure and narcosis in artificial respiration by insufflation* made to the Biological Society, December 19, 1896, **TUFFIER** and **HALLION** explained the advantages of their apparatus for insufflation. In order to vary the narcosis, it is only necessary to change the rhythm of the insufflation, or to cause expiration to go on through a tube plunged in water to a greater or lesser depth. The resistance to the respiration varies with the depth of the tube under water, and the intrabronchial pressure and the volume of the lungs can thus be regulated at will. On the other hand, by inserting into the adductor tube a branch tube which passes through a a bottle containing chloroform or ether, the current of air for insufflation may be made to pass in any desired proportion through this bottle, where it becomes charged with narcotic vapor.

MARIANI invariably found that inhalations of oxygen brought about important changes in the urine, namely, increase in the amount of urea and nitrogen, and diminution in the amount of the toxicity. On the other hand, he observed a marked alkalinity of the blood. He therefore concluded that inhalations of oxygen may be advantageously resorted to in all infections associated with disturbances of the organic exchanges.

LE PILEUR called the attention of the Society of Dermatology and Syphilography on December 10, 1896, to *acquired syphilis in a patient suffering from hereditary syphilis.* His mother, for some months previous to his birth, had undergone treatment with mercury, and was delivered at term. The father was an alcoholic, and had contracted syphilis six years before the birth of this child. The child's physical and intellectual development was imperfect. The skull was remarkably small and the face dull. The roof of the mouth was extremely narrow and the teeth were small, stubby, and covered with striæ and erosions. When nineteen years of age, he contracted syphilis during coitus, and two months later presented a hard chancre in the balanopreputial furrow, and, in addition, roseola, sore throat, headache, etc.,—in short, all the usual symptoms of acquired syphilis. It was evident, therefore, that a subject of hereditary syphilis might acquire syphilis, or else the above trophic disturbances must be considered as belonging to the lesions described by Fournier as parasyphilitic.

Vienna.

TWO CASES OF THRUSH OF THE BLADDER—A TUMOR OF THE STOMACH WHICH DEVELOPED UNDER THE EYE OF THE OPERATOR—THERAPEUTIC VALUE OF CATHETERIZATION OF THE URETERS—BEST TREATMENT OF CHRONIC CONSTIPATION.

At the session of the Society of Physicians held December 11, 1896, FRISCH presented a patient with *thrush of the bladder.* The attack was sudden, without known cause, and was accompanied by painful micturition. The use of a catheter showed the presence of air in the bladder, and the last few drops of urine that were drawn off were mixed with bubbles of air. The urine contained traces of albumin, four per cent. of sugar, and a great number of small white kernels, which the microscope showed to be mycelia. The urinary sediment also contained yeast cells.

BRIK mentioned a very similar case observed by him in which the etiology was especially interesting. The patient, an officer of past middle life, was diabetic and had had several attacks of cystitis and pneumoturia. In a recent attack, marked by a great sensitiveness above the symphysis, the catheter was completely stopped up by a white membrane in which numerous bacteria, threads of mycelium, and yeast fungi, were demonstrable. The patient, who suffered with thrush in the throat, and who for convenience always carried his catheter in his pocket, had the habit of moistening the instrument in his mouth before inserting it into the bladder. The symptoms of thrush in the bladder improved after injections of nitrate of silver.

SCHNITZLER had a patient, aged thirty-five, whose mother died from cancer of the stomach, and whose sister also died from some gastric trouble. For eleven years this patient had suffered from oft-recurring severe gastric pain, and said that she had vomited great quantities of blood. She was kept in bed for a time on a milk diet, and did not vomit at all. Six months later she returned to the hospital with the statement that during her absence she had vomited blood many times and had suffered almost constant pain. Abdominal palpation was negative. Two days later, however, a tumor was plainly made out in the region of the stomach. An exploratory laparotomy was performed, and the stomach found to be apparently normal. Suddenly there developed a tumor of the pyloric region about 7 cm. long and 5 cm. wide. It was very hard and obstructed the lumen of the stomach. This tumor, which was due to muscular contraction, was either purely hysterical or was of a reflex character, caused by the presence of an ulcer of the stomach. An incision was made through it longitudinally, but neither a fresh ulcer nor a cicatrix was found; in fact, nothing abnormal was seen. The incision was sutured transversely in order to prevent the same muscle fibers from growing together. Since the operation there have been no attacks of pain. Although this is the only case in which such a spasm has been directly observed, cases with similar histories have been operated upon but nothing found.

KOLISCHER discussed the *therapeutic value of catheterization of the ureters.* This procedure may be of therapeutic advantage in three ways; first, by pushing back into the pelvis of the kidney a stone which has become wedged in the ureter, thereby preventing the escape of urine; second, by breaking a soft calculus into small pieces; and third, by assisting the passage of the stone into the bladder. This actually happened in one of Kolischer's cases in which he injected 3 grams of liquid vaseline through a catheter inserted into the ureter to the distance of 3 cm. The calculus was passed into the bladder in three-quarters of an hour.

BUMM discussed the *best treatment of chronic constipation* at the session of the Medical Club, held December 16, 1896. Massage, electricity, gymnastics, and hydrotherapy, were all favorably mentioned. Purgatives are seldom of value. It is important to know in what part of the intestine the fecal masses accumulate. He had noticed in gynecologic examinations that the rectum was often filled with feces, although the patient had asserted that her bowels moved regularly; while women in whom the rectum was empty complained of constipation. In such cases the seat of fecal accumulation is not in the lowest part of the large intestine, but is frequently in the region of the splenic flexure, a point which should be remembered in the treatment. Moreover, massage is to be looked upon not as a mechanical means of pushing along the feces, but as a passive gymnastic exercise of the intestinal wall. Massage also increases the flow of bile which in turn favors the evacuation of the intestine.

SOCIETY PROCEEDINGS.

NINETY-FIRST ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

Held in Albany, January 26, 27, and 28, 1897.

[From our Special Correspondent.]

JAMES D. SPENCER, M.D., of Watertown, President.

FIRST DAY—TUESDAY, JANUARY 26TH.

THE meeting was called to order by the President, and prayer was offered by the Rev. Dr. Selden of Albany.

The

PRESIDENT'S INAUGURAL ADDRESS

was then delivered by JAMES D. SPENCER, M.D. He said that much good work had been done by the State Board of Health, but their work was largely a labor of love, and required the expenditure of much time. They should have at their disposal the necessary funds for prosecuting the very important work of thoroughly inspecting cattle, and detecting those which are diseased. This inspection should be carried out in a scientific manner, and demands the services of a skilled bacteriologist. The offensive trades should also be placed within the jurisdiction of the State Board of Health.

A movement was on foot, the speaker said, looking to the organization of a body to be known as the "National Confederation of Committees on Legislation of State Medical Societies." It was to be so constituted as to be an amplification of the committees on legislation of the various State Societies throughout the Union. It was recommended that this Society should appoint a committee of five or ten members to consider this matter, and, if deemed advisable, to represent the Society in this proposed national organization.

The subject of the work of the Board of Regents was next considered. It was stated that New York State had nearly seventeen per cent. of all the medical students of the United States. Of the 2273 candidates who had taken the licensing examinations, over twenty-two per cent. had been rejected. Of the 733 candidates last year, 181 were unsuccessful.

The announcement was made that the Society had been invited to send a delegation on May 8, 1897, to the centennial celebration of the Westchester County Medical Society—the oldest medical society in the State.

STATE MEDICAL EXAMINATIONS.

M. J. Lewi, M.D., presented a report on this subject. He said that 23.7 per cent. of the candidates had been rejected at the examinations. Of those coming from the medical schools of New York State 86.2 per cent. received licenses, whereas of those graduated from schools outside of the State only 74.5 per cent. passed the examinations. An applicant must receive 525 points out of a possible 700 to receive a license to practice medicine. A neighboring State has made the claim of a higher standard, because their candidates were required to obtain 675 points, but a careful consideration of their method of rating would show that 675 points were required out of a possible 900—exactly the same standard as prevails in our own State. Since the enactment of the laws which established this Board in our State 1893 licenses have been granted. In this same period 2832 persons have applied for licenses to practice medicine. Of this number 29.2 per cent. were found incompetent and deficient.

After adopting this report the State Medical Society passed a resolution requesting that the Legislature should not interfere with the law as it now stands, unless requested to do so by this Society.

REPORT OF COMMITTEE ON LEGISLATION.

A. Walter Suiter, M. D., of Herkimer, the chairman, presented the report. He stated that the committee had not succeeded in securing the repeal of the law requiring public school instruction in the effects of alcohol and narcotics, but had secured a favorable modification of the same.

It was expected that a bill would be introduced shortly requiring the licensing of midwives by the Regents of the University, after proper examination and on the same grounds as licenses were granted for the practice of medicine. The proposed measure would contain one provision, which had unfortunately been omitted from the medical practice law, *viz.*, the power to revoke a license for cause.

It should be noted that the Stanchfield bill, which proposed to restore the matriculation examinations to the hands of the faculties of the medical colleges, had been vigorously and successfully opposed, not only by the medical societies, but by the faculties of all the colleges in the State, *save one.*

The bill to incorporate the "Optical Society" was defeated. Had it passed, it would have allowed 4000 persons in the State to become, in a certain sense, licensed practitioners.

So much objection had been raised to the method provided for in the bill abolishing the coroner's office for appointing the medical examiners, that this bill had been defeated. The committee hoped to advocate another similar bill before the present legislature.

REPORT OF COMMITTEE ON HYGIENE.

Henry R. Hopkins, M.D., of Buffalo, the chairman, presented the report. He said that as the mortality for the last year reported was 38,000 from contagious, infectious, and communicable diseases, there was abundant reason for giving much attention to the subject of hygiene. The committee recommended that the society ask the various county organizations to establish local societies to consider especially matters relating to the public health.

The report of the committee was accepted, and the last recommendation especially commended.

VIVISECTION.

On motion of Dr. Vanderveer of Albany the Society instructed the secretary to notify Senators Hill and Murphy that it had adopted a resolution condemning Senate bill No. 1552, entitled "An act for the further prevention of cruelty to animals in the District of Columbia."

On motion of Dr. W. O. Stillman of Albany the Society also appointed a committee to confer with the Humane Society on this matter.

PRELIMINARY MEDICAL EDUCATION.

Daniel Lewis, M.D., of New York, offered the following resolution: That the Committee on Legislation be requested to prepare and present to the Legislature an amendment to the present medical law, allowing medical students, graduates of literary colleges, credit for the last year of study in such literary colleges.

Dr. D. B. St. John Roosa, of New York, said that in this country our zeal had led us to exceed even the requirements of Germany. According to present legislation, a man who desired to receive a liberal education in addition to his medical course and term in a hospital, could not begin the practice of medicine before the age of thirty years. In Germany the study of medicine was begun at about the age of our sophomores. The resolution was adopted.

Scientific Session.

Lucien Howe, M.D., of Buffalo, presented a *résumé* of a carefully prepared paper on

A GEOGRAPHY AND ARITHMETIC LESSON ON BLINDNESS IN NEW YORK STATE.

He said that his statistics would show that it is possible to lessen the blindness in this State by one-tenth, and reduce the cost to the State of caring for the blind $50,000 annually. A recent examination of over 3000 children in the two asylums of this state showed that purulent ophthalmia was responsible for twenty-one per cent. of the cases of blindness in these little ones, and for a little over ten per cent. in those of all ages. This large amount of blindness is attributable to: (1) The negligence of the obstetrician in omitting Credé's method for preventing ophthalmia; (2) the negligence of the attendants in obtaining prompt relief; and (3) to the inability of the oculist, in about five per cent. of the cases, to prevent the destruction of the eye in purulent ophthalmia. The author indorsed the conclusion of Cohn of Breslau, based on a tabulation of 3000 cases—*i.e.*, that ophthalmia neonatorum can be, and must be, wiped out from every civilized country.

Matthias L. Foster, M.D., of New York, presented a paper on

THE FITTING OF GLASSES.

He advised; (1) To test the vision of each eye at twenty feet; (2) to examine the eyes with the ophthalmoscope; (3) determine the amount of corneal astigmatism; (4) correct the principal refractive error; (5) determine the range of accommodation and add such spherical lenses as may be necessary to correct any presbyopia; and (6) ascertain any muscular error, and, after repeated examinations only, determine whether it is necessary to correct this error.

Dr. St. John Roosa said that an experience of half an hour with the ordinary tests should make the general practitioner an expert in testing vision.

Charles W. Cox, M.D., of Brooklyn, read a paper on

A CONTRIBUTION TO THE STUDY OF COUGH DUE TO IRRITATION OF THE UPPER RESPIRATORY TRACT.

He said that the two regions most provocative of nasal cough were the posterior ends of the inferior turbinated bodies and the posterior end of the septum. Cough, particularly "morning cough," is often due to irritation in the naso-pharynx from adenoids, or the accumulation of viscid, tenacious mucus. The glazed mucous membrane found in atrophic rhinitis may also excite cough, as may also, in exceptional cases, papillomata of the soft palate. The important bearing of these considerations on the therapeutics of cough is evident. A constant and useless cough is not entirely devoid of danger.

Dr. John O. Roe of Rochester said that when there was no expectoration, cough must be looked upon as the result of some irritation in the upper respiratory tract. One of the most prolific sources of cough is a glandular hypertrophy or an aneurismal varix at the base of the tongue.

James K. Crook, M.D., of New York read a paper on

PRACTICAL CONCLUSIONS BASED ON 500 CASES OF CARDIAC DISEASE. THE COMPARATIVE PROGNOSIS OF THE VALVULAR LESIONS.

Out of a total number of 5817 cases on the dispensary record 3334 were males and 2483 females, of all ages over fifteen years. There were 277 cases of functional, and 226 of organic heart disease; 60 of mitral regurgitation; 35 of mitral stenosis; 7 of aortic regurgitation; 36 of aortic stenosis; 6 of tricuspid regurgitation; 1 of pulmonary stenosis: 19 of double aortic lesions, and 12 of double mitral lesions. Of the males, 149, or 4.45 per cent., suffered from functional, and 137, or 9.01 per cent., from organic heart disease. Of the females, 128, or 5.15 per cent., had functional, and 86, or 3.46 per cent., had organic cardiac disease. In the males, the three principal causes of functional disorders of the heart were: (1) disturbance of digestion; (2) excessive use of tobacco; and (3) excessive use of alcohol. Among the females, the functional disorders were mainly due to indigestion, anemia, and chlorosis; in only a very small proportion were they the result of excessive tea-drinking.

The hemic murmurs, Dr. Crook said, were almost invariably systolic. They were heard over the aortic and pulmonary areas, were usually transmitted to the great arteries of the neck, and, in the majority of cases, were accompanied by a venous hum. These blood murmurs are rarely audible below the third rib. In his experience the "water-hammer" pulse had been present in every case of aortic regurgitation. This sign seemed to be even more constant than the murmur itself. While mitral regurgitation is the most frequent lesion, it is also the most tractable and hopeful.

Richard Van Santvoord, M.D., of New York called attention to the fact that we had in the sphygmograph a ready means of determining the amount of regurgitation and of obstruction at the aortic orifice. Referring to the "water-hammer pulse," he said that the failure of the dicrotic impulse might be due as much to the lack of elasticity in the aorta as to the amount of regurgitation at the valvular orifices.

Eli H. Long, M.D., of Buffalo said that to differentiate between diastolic and systolic murmurs one had only to make intermittent pressure on the radial pulse and note whether or not the murmur is synchronous with the radial pulsation.

Woods Hutchinson, M.D., of Buffalo read a paper on

SOME DISEASES OF THE ALIMENTARY CANAL, IN THE LIGHT OF ITS DEVELOPMENT AND ANCESTRY,

in an effort, as he said, to apply the comparative method of study to pathology, following out the lines of the address delivered before this Society last year by Dr. Roswell Park. He said that the most primitive stomach is the depression found in the ameba. In this organism, if one stomach were unsatisfactory, another depression could be made to serve the purpose. The first permanent stomach in the scale of evolution is to be found in the protozoa. He said that one of the best morphological definitions of man is "a stomach and its appendages." An infant stomach is practically in the "fish stage;" in other words, the human infant is essentially carnivorous in its tastes. If sacculation and enlargement of the stomach go beyond a certain point, the proper motility of the organ is lost and serious pathological conditions result. The greater the *normal* distention of the stomach in a given class of animals, the greater the pathological significance of any undue distention. This is well illustrated in the herbivora.

EMIL MAYER, M.D., of New York presented a paper on

SOME UNUSUAL CAUSES OF COUGH,

and drew the following conclusions: Cough is reflex in origin (1) when spasmodic and almost constant, without expectoration and elevation of temperature; (2) when the physical signs of pulmonary disease are absent; (3) when it persistently resists all medication; (4) when the general health is comparatively undisturbed, and (5) when, upon the removal of the cause, the cough promptly ceases.

ELI H. LONG, M.D., of Buffalo, in a paper entitled

DOES THE U. S. PHARMACOPEIA KEEP PACE?

referred to the fact that the New York State Medical Society, at the instance of the New York County Society, had issued the original call for a meeting, looking toward the adoption of a National Pharmacopeia. While this work originated with the medical profession, to-day the pharmacal institutions and societies predominate in the work of revision. It would seem better to have an equal representation of the two professions. He suggested that in the next pharmacopeia, a section should be devoted to furnishing reliable information concerning new drugs of tried value, and that each year a supplement to this should be issued. If it were thought best to include the matter of dosage, it would be least objectionable to do this in the index, where the dosage given would not be looked upon as giving an authoritative standard.

AFTERNOON SESSION, JANUARY 26.

CLARENCE C. RICE, M.D., of New York, read a paper on

THE EFFECT OF CIGARETTE SMOKING ON THE RESPIRATORY MUCOUS MEMBRANE.

He stated that while most writers asserted that cigarette smoking produces only a moderate degree of congestion of the mucous membrane, his experience indicated that it was responsible for the production of marked atrophic nasal catarrh, with a glazed pharyngeal mucous membrane.

The forced and oft-repeated inspirations, the rapid evaporation from the mucous surface, and the irritation produced by the smoke, are certainly sufficient to give rise to inflammation.

CHARLES E. LOCKWOOD, M.D., of New York, presented

A CONTRIBUTION TO THE STUDY OF AMEBIC DYSENTERY.

He reported a case of amebic dysentery that had recently come under his observation, and from a study of this, made the following deductions: (1) It is important to differentiate this form of dysentery from the others; (2) the feces should be examined microscopically in all cases of obstinate diarrhea characterized by remissions and exacerbations, with a notable tendency to chronicity and anemia, if accompanied by offensive, brownish-yellow, liquid stools, and colicky pains; (3) in these cases, rectal douches of bisulphate of quinin, 1–5000 or 1–1500, are markedly efficient; (4) it is important to make an early diagnosis, before the parasite has penetrated the submucous tissues, for, if this should occur, it is likely to lead to abscess of the liver; (5) these cases are liable to relapse, even after considerable time; (6) it is not improbable that there is a kinship between the ameba and the organism of intermittent fever; and (7) there is a possibility that acid solutions are beneficial in this disease, as they are inimical to the amebæ.

JOSEPH EASTMAN, M.D., of Indianapolis, by invitation, presented a paper on

FANCIES AND FACTS IN OUR WORK.

He said that many a life had been sacrificed by the fancied chemical sterilization of the hands and instruments, to the neglect of mechanical sterilization with soft soap and the nail-brush. Speaking of pelvic inflammation, he said that it was wrong to resort to the vaginal route, when the abdominal route was equally available, for it involved the destruction of the pelvic floor and vaginal vault. For cancer, vaginal hysterectomy was especially valuable, if done by an expert. All physicians should bear in mind that at the menopause, unless a discharge is absolutely *symptomless*, it calls for a searching examination.

Regarding appendicitis, or cases of suspected intestinal obstruction, the speaker said that these cases should be treated either medically or surgically, and not by a "fatal compromise" of the two. We should no more countenance the use of purgatives in these cases than in strangulated hernia.

DR. A. PALMER DUDLEY expressed the opinion that the chief cause of the mortality in suppurative appendicitis is the enthusiasm of the surgeon in his efforts to remove the appendix in all cases.

DR. GEORGE R. FOWLER of Brooklyn protested against the plan of invaginating the appendix during an abdominal operation, done for other lesions, as he had known it to result in gangrene and fatal sepsis.

DR. EASTMAN replied that during the past few years he had invaginated the appendix many times under these circumstances, and apparently with no bad results attributable to it although some of the patients had died.

JOHN O. ROE, M.D., of Rochester, read a paper on

THE CORRECTION OF DEPRESSED AND SADDLE-BACK DEFORMITIES OF THE NOSE BY OPERATIONS PERFORMED SUBCUTANEOUSLY WITHOUT THE AID OF METALLIC OR OTHER ARTIFICIAL SUPPORTS.

He said that the operation considered in this paper was applicable to cases in which the septum is present. There are two classes of depressed noses—idiopathic and traumatic. The first class is due to lack of development of the central portion, and excessive growth of the tissues of the end of the nose. To be successful the operation must be done under the most scrupulous asepsis and antisepsis, and the after-treatment carefully supervised.

W. E. FORD, M.D., of Utica, presented a paper on

GAUZE DRAINAGE IN SURGICAL GYNECOLOGY.

He referred to the danger of iodoform poisoning from the use of iodoform gauze for drainage. His rule was to allow gauze to remain in the uterus for five days unless there was a rise of temperature and pain. He did not favor replacing the gauze. The gauze is not only useless but positively dangerous in the uterus in cases of gonorrheal inflammation. Since he had adopted the practice of curretting and tamponing before performing trachelorrhaphy, his results had been much better. In septic metritis he used a light gauze packing for not more than forty-eight hours. Recently he had found that after curetting a cancerous uterus, much comfort could be given the patient by a gauze packing wet with a solution of acetanilid. It also acted as a styptic.

DR. EASTMAN said that if gauze were used in the cervix it would, as shown by Savage, invariably cause contraction of the fundus. This would lead to obstruction, rather than drainage.

DR. H. L. COLLYER of New York said that by packing the uterus tightly with gauze the cavity would be plugged. On the other hand, if only a strip of sterile gauze were inserted drainage would be secured.

DR. DUDLEY of New York said that iodoform was more prone to absorption if used in the form of the glycerite.

W. GILL WYLIE, M.D., of New York presented some

OBSERVATIONS ON ABDOMINAL AND PELVIC SURGERY; PREPARATION, OPERATION, AND RESULTS.

His results in the last three years of hospital work were as follows: In 121 operations at Bellevue Hospital there had been ten deaths, or a mortality of 8.35 per cent. In 189 operations at his private hospital there had been three deaths, or a mortality of only 1.61 per cent.

WALTER B. CHASE, M.D., of Brooklyn presented a paper on

ABSORBABLE LIGATURES AND SUTURES IN PELVIC AND ABDOMINAL SURGERY.

He said that the qualities of an ideal ligature are sterility, pliability, strength, and endurance. Catgut, when washed in alcohol and sterilized at a high temperature and sealed in tubes, became so hygroscopic that when placed in the tissues it soon swells, filling the puncture and tightening the suture.

OBSTETRICAL DISCUSSION.

WM. WARREN POTTER, M.D., of Buffalo opened this discussion with a paper on

PUERPERAL ECLAMPSIA.

He said that the treatment should be both preventive and curative. The former should be both medicinal and hygienic, and the latter medicinal and surgical. One of the best methods of controlling the toxemia is by an exclusive milk diet, and one of the best diuretics for such cases is distilled water. When the eclampsia has become established, full chloroform anesthesia should be secured, and then, if necessary, the uterus should be promptly emptied by rapid dilatation of the cervix and the use of forceps. Cæsarean section should be reserved for extreme pelvic deformity or when the mother's condition is hopeless.

JAMES P. BOYD, M.D., of Albany, read a paper on

THE INDICATIONS FOR AND TECHNIC OF THE INDUCTION OF PREMATURE LABOR.

Premature labor should be induced in some cases of placenta previa and eclampsia in advanced disease of the heart or lungs, in hydramnios, where the fetus is dead, or when, in previous labors, the head of the child has been unusually large or unduly ossified. The speaker said that labor could be best induced by the insertion of an aseptic, flexible, solid bougie. Under the strictest aseptic and antiseptic precautions, this bougie should be inserted with the aid of Sims' speculum and a tenaculum to steady the cervix. Labor may be hastened in urgent cases by the use of Barnes' bags or by manual dilatation.

A. B. MILLER, M.D., of Syracuse, continued the discussion with a paper entitled

INFECTION OF THE PUERPERA.

He said that true puerperal infection is the result of the entrance into the birth canal of microörganisms whose habitat is outside that canal. The chief point in the treatment is to secure surgical cleanliness. Antiseptic douches destroy the germicidal secretions and act harmfully by diminishing the vital resistance, and hence the power to withstand infection.

WILLIS G. MACDONALD, M.D., of Albany, read a paper on

OBSTETRIC DELIVERY BY ABDOMINAL SECTION: INDICATIONS AND METHODS.

He said that craniotomy must be confined to cases where the fetus is already dead and the conjugate diameter is under two and a half inches. It was not nearly so safe or so simple as many claimed. Under suitable conditions, and in cases of moderate pelvic deformity, symphysiotomy would be the operation of election.

A. VANDERVEER, M.D., of Albany, presented a paper on the

PRESENT TREATMENT OF FIBROIDS ASSOCIATED WITH PREGNANCY.

He said that the subperitoneal variety of fibroid was not usually injuriously affected by pregnancy, while the interstitial or submucous variety was sometimes converted into a polypus, so that it could be easily enucleated.

DR. WILLIAM M. POLK of New York continued the discussion. He believed that when the cervical canal remained rigid in a case of puerperal eclampsia, veratrum viride and morphin would often give valuable aid. When these failed, he would advise placing the patient in Sims' position, separating the bladder, controlling the parts by clamps, and then dividing the internal os by a linear incision. Cases of pregnancy complicated by fibroids should be attacked only from above, and preferably by the Porro operation.

DR. H. J. BOLDT of New York was entirely opposed to the induction of abortion, even in the early stage of pregnancy complicated by fibroids. If at full term delivery could not be effected normally, we should at once remove the tumor and the *entire* uterus from above.

DR. C. A. VON RAMDOHR of New York favored the removal of both the uterus and fibroid by abdominal section. For a rigid cervix in a case of eclampsia, the cervix should be incised by either Polk's or Dührssen's method.

DR. A. PALMER DUDLEY believed Cæsarean section to be preferable to any other method of surgical delivery, even in cases of eclampsia. Much valuable time was thus saved, and there should be no danger of sepsis.

DR. SEARS of Syracuse said that from his own experience he could indorse all the remarks of Dr. Potter. He called attention to the danger incurred in using the curette after full term delivery. In many such cases irrigation of the uterus was much safer.

Dr. Potter, in closing the discussion, said that he regarded veratrum viride, morphin, and venesection as very dangerous, unless used with great discretion.

H. J. BOLDT, M.D., of New York read a paper on

THE CAUSES OF DEATH AFTER ABDOMINAL OPERATIONS.

He said that since the general adoption of the Trendelenburg position he believed that the mortality after abdominal operations had been decidedly increased. He had come to consider it dangerous to perform such operations shortly after a severe illness, such as pneumonia or la grippe, for undoubtedly there is more danger of septic infection, owing to the diminished vital resistance. Carelessness or ignorance in the administration of the anesthetic was probably a not unimportant factor in increasing the mortality.

EVENING SESSION.

DR. WM. HAITES of Albany made some remarks on the

PRACTICAL APPLICATION OF X-RAYS IN CASES OF FRACTURE.

He reported three recent cases in which the X-rays had rendered valuable assistance.

DR. REGINALD H. SAYRE of New York made some remarks on

POSTURE IN DIAGNOSIS OF DISEASE,

and illustrated them by lantern views.

DR. WM. JAMES MORTON of New York then gave an

X-RAY STEREOPTICON EXHIBITION.

He said that both the static machine and induction coil might be used. The coil should be capable of giving not less than an 8-inch spark. In taking a skiagraph of the hand, the source of the X-rays should be about one foot distant; for larger objects it must be further off.

SECOND DAY—WEDNESDAY, JANUARY 27TH.

To expedite the Scientific Proceedings **L. D. BULKLEY, M.D.**, offered a resolution directing the Business Committee to limit the number of papers at the annual meeting to fifty; to receive no titles of papers after December 1st unless this number had not been received, and to print on the program the time allotted each paper, this time not to exceed twenty minutes, except in the case of invited guests.

In the discussion of this motion it was opposed by **DR. ROOSA** on the ground that it would not have the effect desired by its proposer.

The matter was finally referred to the Committee on By-Laws.

DR. BULKLEY then read a paper entitled,

DEFICIENT EXCRETION FROM KIDNEYS NOT ORIGINALLY DISEASED, AND SOME DISEASES PECULIAR TO WOMEN, AND DISEASES OF THE SKIN.

This paper, he said, was so entitled as it was intended to be merely supplementary to the interesting paper on this address delivered by Dr. Etheridge last year. He had simplified Dr. Etheridge's table of the relation of the total urinary solids to the body-weight, thus: the urinary solids excreted in the twenty-four hours should amount to 500 grains for a body-weight of ninety pounds, and this amount of solids should be increased seven grains for every additional five pounds of body-weight. To determine the quantity of urinary solids: multiply the last two figures of the specific gravity by the number of ounces of urine voided in the twenty-four hours, and increase this ten per cent.

DR. HENRY R. HOPKINS of Buffalo said that it was customary for physicians to interrogate the urinary secretion in almost every other particular than in the very important one discussed in this paper.

DR. REYNOLD W. WILCOX of New York said that by this estimation of the urinary solids one could usually detect renal insufficiency long before the appearance of albumen or casts in the urine.

DR. MORTON of Brooklyn, said that eczema was (1) either purely local, or (2) was due to vaso-motor disturbance. The latter was the result of the circulation in the blood of certain toxic substances.

DR. BULKLEY, in closing, said that experiment had shown that the coloring matters and extractives constituted half of the toxicity of the urine; hence the importance of knowing the total quantity of urinary solids.

THOMAS E. SATTERTHWAITE, M.D., of New York, read a paper on

THE TREATMENT OF HEART DISEASE.

He said that absolute rest in the treatment of heart disease must soon be supplemented by either active or passive muscular movements. He preferred the use of a mixed diet, and the moderate ingestion of fluids between meals. There are three classes of Schott exercises: (1) Passive movements resisted by the patient; (2) slow, voluntary movements of the patient, resisted by the operator; and (3) an elaboration of Stoke's old method of pedestrian exercises. The Schott exercises are always gentle, and the method has the merit of being safe. The warm, saline, effervescent baths are a valuable aid to these exercises, and can be, without great difficulty, extemporized by the physician. Among our remedies, Dr. Satterthwaite still looked upon digitalis as the best. Iodid of sodium or potassium was useful, as it could be given with benefit for a long time.

DR. WILCOX said that undoubtedly the Schott baths and exercises caused a speedy diminution in the size of the ventricles. It was certainly superior to the Oertel method. But it must be admitted that the peripheral resistance could be just as well reduced by the nitrates, and the ventricles made to contract by the use of strophanthus, as could be done by the bath treatment.

DR. HENRY L. ELSNER, of Syracuse, spoke of the very common use of nitroglycerin, with a total disregard of its physiological action. It should only be used for the purpose of overcoming obstruction to the circulation. If used where the heart is weak and flabby, and the coronary arteries already dilated, the result is likely to be disastrous.

E. C. SPITZKA, M.D., of New York, presented a paper entitled

PRACTICAL POINTS RELATING TO THE DIAGNOSIS AND MANAGEMENT OF SYPHILITIC BRAIN DISEASES.

He dealt chiefly with the differential diagnosis between true melancholia and that melancholic state found in the initial period of syphilitic dementia. In true melancholia, the patient is sad because he cannot be anything else; he suffers from insomnia, and is constantly depressed; he is neglectful about his dress. In the other condition, the individual is depressed because he cannot attend to his business; he sleeps soundly at night, and often also during the day; he is inclined to be irritable, but varies greatly in temper from day to day; he is extremely particular about certain features of his dress and negligent about others. Early treatment, the speaker said, should often prove very effective. The most common error was a too exclusive reliance on the iodids, His own initial treatment was always by mercury.

DR. FREDERIC E. STURGIS of New York said that while these syphilitic melancholiacs often talked of suicide, they rarely attempted it. In his opinion, the iodids were here very much more rapid in their beneficial effects, and they also served to check the more serious subsequent symptoms.

DR. L. D. BULKLEY said that the use of mercury enabled one to greatly reduce the dose of the iodids.

DR. WILLIAMS suggested that the existence of a subnormal temperature for days together should lead to a suspicion of late syphilis.

LANDON CARTER GRAY, M.D., of New York, read a paper on

THE TREATMENT OF LOCOMOTOR ATAXIA,

to appear in next week's NEWS.

HENRY L. ELSNER, M.D., of Syracuse, reported

A CASE OF ERYTHRO-MELALGIA.

The patient experienced intense pain in the hands, so that she was even willing to submit to amputation. The erythematous spots were chiefly on the bases and tips of the fingers, but the lesion was more extensive on both thumbs. The erythema persisted, and while this was present a true Reynaud's gangrene occurred on the tip of the thumb. The only explanation he could offer for this unique phenomenon was, that where blood-vessels have been long distended, the intema becomes thickened, and finally causes obstruction and gangrene.

REYNOLD W. WILCOX, M. D., of New York, read a a paper on

STROPHANTHUS.

After studying one known and reliable variety of strophanthus—that used by Fraser in his original investigation—he had arrived at the following conclusions:

(1) Strophanthus increases the muscular action of the heart by direct action on the muscle itself; (2) its rapidity is unequaled by any other cardiac drug; (3) it has practically no effect on the size of the blood-vessels; (4) it is regularly eliminated by the kidneys; (5) unless too frequently repeated, there is no accumulative action; (6) it stands almost alone among heart remedies in acting only on the heart muscle; (7) it is about 300 times stronger than digitalin, and 300 to 400 times stronger than caffein, and, (8) it is diuretic only when the increased blood pressure invokes diuresis.

DISCUSSION ON THE RELATION OF IMPURE DRINKING WATER TO DISEASE, AND THE CURE AND PREVENTION OF THE LATTER.

GEORGE BLUMER, M.D., of Albany, opened this discussion by a paper on

DISEASES WHICH CAN BE DIRECTLY TRACED TO CONTAMINATED WATER.

He said that the diseases due to animal organisms in water were malaria and amebic dysentery, although the evidence in the case of malaria is not very conclusive. The diseases due to vegetable organisms are typhoid fever, Asiatic cholera, and certain diarrheal diseases.

ROWLAND G. FREEMAN, M.D., of New York continued the discussion with a paper on

DANGERS OF THE DOMESTIC USE, OTHER THAN DRINKING, OF CONTAMINATED WATER.

He said that in eleven epidemics of diphtheria caused by milk that he had collected, in two it was supposed to have arisen from the use of contaminated water on the farms. In fifty-three epidemics of typhoid fever due to milk, in nine it was found to have originated in foul water. The danger of typhoid fever being disseminated by oysters had been known only since 1894. The typhoid bacillus will live for eight days in water taken from oyster-beds. If injected in oysters these bacilli may be found for thirty days.

T. B. CARPENTER, M.D., of Buffalo read a paper on the

METHODS OF PURIFICATION OF IMPURE WATER.

He said that in practice sand filters had recently been proved to be quite efficient. Mechanical filters, to be efficient, must be used with some coagulent, such as alum.

The following officers were chosen for the ensuing year: President, Seneca D. Powell, M.D., of New York; Vice-President, Lucien Howe, M.D., of Buffalo; Secretary, Frederic C. Curtis, M.D., of Albany; Treasurer, Charles H. Porter, M.D., of Albany. The chairmen of the various committees were all re-elected.

(To be continued.)

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

SOME CLINICAL CASES OF DISEASE OF THE TESTICLE.[1]

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THE diagnosis of disease of the testicle is not always clear. The history is frequently inexact, and pathological conditions which differ widely from each other oftentimes have the same appearance and give the same sensations to palpation. Often it is only after repeated and frequent observation of the case, or after the appearance of a positive pathological condition which differentiates the disease, that a diagnosis is made. On the other hand, it may happen that no diagnosis can be made until after some operative procedure, either one which is simply exploratory, or one which involves the excision of the organ, and this delay, necessary perhaps, may jeopardize the life of the individual. To illustrate these points I beg leave to present for your consideration the following group of cases. The first one, which was marked by extreme suffering, presented no salient diagnostic features, and was only elucidated after the organ had been removed.

The patient, a man aged fifty-four years, came under my observation three days after the beginning of pain in his left testicle. He gave a history of having had several attacks of gonorrhea, the first one thirty-five years previously, and six subsequent attacks. They pursued the ordinary course, and I doubt if the man was ever entirely free from urethral discharge. He was a steady drinker but not an inebriate, according to his own story. His last attack of gonorrhea had occurred three years before he came under my observation, and about that time he had an internal urethrotomy performed by one of my colleagues. Three days before I saw him, after a long walk (to which the patient attributed the commencement of his malady), his left testicle increased in size and became more and more painful. The pain was so severe that it interfered with his work, and he entered the hospital. An examination disclosed that the left epididymis and the testicle proper were twice the normal size, hard, and extremely tender; the tissues of the scrotum were livid and edematous. There was no acute urethritis present, and he gave no history of syphilis or of traumatism. The man's general condition was good, his right testicle was normal in size, and although the suspicion of tubercular inflammation was suggested, there was nothing to confirm it. He was put to bed and simple treatment by suspension and poulticing was instituted, but the patient suffered intensely and could only be relieved by opiates. The temperature rose to between 102° and 103° F. Ten days later, all treatment having proved unavailing, the patient was anesthetized, and suspecting pus in the tunica vaginalis, I laid the latter open. A small quantity of pus exuded, together with layers of fibrin and small clots, which inclined me to the belief that I was dealing with an old hematocele. The wound was left open and dressed in the usual antiseptic manner. The operation only partially relieved the patient; he still complained of pain which again increased in intensity, and in spite of the administration of opium he suffered very much. The testicle was examined from time to time to see if any pus remained in the cavity of the tunica vaginalis, or if there were any local accumulations in the scrotum, but none could be found. The testicle proper continued to be intensely painful, exquisitely sensitive to manipulation, but no special point of pain or of fluctuation, or even of tension, could be ascertained. Accordingly, nine days later he was again anesthetized and the testicle removed. The visceral layer of the tunica vaginalis was very much thickened, and in making an incision through this between the epididymis and the body of the testicle was found an accumulation of pus shaped like a cone with its apex downward, accurately circumscribed and held in place by the thickened tissues.

The pathologist's report was as follows: "The vessels in the testicle and epididymus are dilated, and at numerous points red blood corpuscles have escaped and are extravasated through the inter-tubular connective tissue. Some of the seminiferous tubules contain red blood corpuscles. There are also numerous areas of round-celled infiltration, often coincident with the areas of extravasated blood corpuscles. The tunica vaginalis is thickened and covered by an inflammatory exudation, composed of fibrin and red and white blood corpuscles. In the sub-serous connective tissue there are small masses of blood pigment, evidently the result of previous hemorrhages. The anatomical diagnosis is acute inflammation of the tunica vaginalis, with hemorrhages old and recent, with secondary inflammatory areas in the testicle and epididymis."

It was evident, both from the macroscopic and microscopic appearances, that an inflammation of some intensity was the origin of this man's suffering, and that the exudation upon the serous membrane had strengthened or fortified it to such a degree that pus between the testicle and epididymis could not escape. The pressure and presence of the pus produced such a degree of suffering that, in the absence of any means of locating it, I do not think any relief could have been obtained without removal of the entire organ.

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[1] Read at the meeting of the New York State Medical Society, Albany, January 27, 1897.

The cause of this man's orchitis was not clear to me. It reminded me, however, of a case, which I reported some years ago, of a man who denied ever having had a urethritis. He came to me with an inguinal hernia, which I decided to operate on. The hernia was complicated by an undescended and inflamed testicle, which had to be removed. On severing the vas deferens there was a little spurt of pus, which, unfortunately, was lost, and no examination for gonococci could be made. Within twenty-four hours the patient developed an acute urethritis, which had evidently been latent until the operation. With this fact in mind, it may not be unreasonable to assume that the other patient also had a latent gonorrhea, which was excited into activity by his long walk, and which was responsible for the inflammatory foci in the epididymis and testicle.

To emphasize the point that in some instances no positive diagnosis can be made until an operative procedure is instituted, take the following case, which, apparently serious, proved to be very simple:

A man aged seventy-three. Up to a few weeks before coming under my observation the history was that of simple hydrocele, which had been tapped, and as he described it, a light, watery fluid had been drawn off. This procedure had been repeated a few times, whenever the increase in size of the scrotum interfered with locomotion, but latterly the fluid obtained had been bloody. Early in the history there had been no pain. Recently, however, the scrotum had become very dark in color, and had grown "hard," and pain had developed in the left testicle, running thence up into the groin. Two weeks before, an attempt had been made to tap it as on previous occasions but no fluid had been withdrawn. Pain persisted, the testicle increased in size, and the old gentleman became prostrated, and was obliged to take to his bed. He was then sent to me with a letter from his doctor, a gentleman of hospital training, with the statement that he suspected that malignant degeneration had taken place in the testicle.

His condition, as nearly as can be described in words, was as follows: There was no rise of temperature; he was pale, anemic, and so weak that it was with difficulty he walked into my office. His scrotum, the whole of it, was enormously enlarged—more than double its normal size, edematous, and of a purplish hue; the left half, particularly, was hard, with intervening soft areas, and very sensitive. Here and there it looked as if the tissues of the scrotum were infiltrated and would speedily break down. The right testicle could be distinguished, and was pushed upwards and outwards by the swelling of the left side. The left side of the scrotum was an indefinable mass, extremely sensitive on palpation, and no satisfactory examination could be made. The cord could be felt enlarged in the inguinal region, and was also sensitive. The tumor was not translucent, even to the direct rays of strong electric illumination. The history, to my mind, pointed more to some inflammatory process than to malignant disease, but it was impossible to make any definite diagnosis, and for a few days he was subjected to tentative treatment, without avail. Then he was placed under ether and a long incision made over the tumor. It was found that a sero-hemorrhagic exudation had taken place into the tissues of the scrotum, but no pus was detected. The tunica vaginalis was found to be much thickened, and filling its sac were several layers of a soft, fibrinous exudate and broken-down blood-clots. This adventitious material, together with a few calcareous plates, which were found on the parietal surface of the tunica, was thoroughly removed by a dissection which included portions of the serous membrane. The testicle itself was found crowded downward and backward by the exudate, but was normal, and was replaced within what was left of the sac. The wound was sutured, drained for two days, and healed without suppuration. There were no adverse symptoms, and the patient was discharged twelve days later.

As is evident, the operation not only cleared up the clinical features of this case and cured the patient, but threw light upon the etiology. Without doubt the whole process had been caused by the later attempts at tapping which had not only injured a vessel but had infected the tissues enough to set up the inflammatory hyperemia, without as yet producing pus.

In contrast with the case which I have just narrated consider this one:

A young man of thirty years whose general health had always been good, came under my observation in October, 1890. His history was very brief. In June and July of that year he had been under treatment for what was called "an enlarged testicle," for which no cause could be assigned. There was no history of traumatism and no antecedent urethritis. He remained under treatment for three weeks at a hospital, and was then discharged. As he had been under the observation of competent men the probability is that at that time there was no suspicion of the nature of the disease. He stated that after leaving the hospital the testicle increased in size, but it was not painful, and did not interfere with his general well-being. Of late he had observed that when irritated, as he described it, by undue exercise—a long walk, for example—it seemed to increase somewhat in size, but there was no spontaneous pain in it. On examination it was found that there was no discoloration of the scrotum. The tissues of the latter were normally movable and were not infiltrated. The whole testicle was uniformly enlarged to about three times the size of its fellow; it was distinctly pulpy on palpation, and pain could be elicited on the slightest pressure. It was not translucent. There was slight enlargement of the cord. There was no enlargement of the inguinal glands and no glandular enlargement could be made out by palpation of the abdomen.

The progressive increase in size of the testicle without pain and without signs of inflammation, and especially its uniform softness as contrasted with other pathological conditions (*e. g.*, syphilis, tubercle) led me to the conclusion that it was of malignant character and should be removed at once. Accordingly, the testicle was excised, the inguinal canal being laid freely open and the cord divided as high up as possible. The wound healed by first intention, although there were a few points of suppuration in the stitch-holes. The patient was discharged cured on the fourteenth day. The pathologist's report showed characteristic carcinoma of the epithelial variety.

I kept this patient under observation. In July of the following year he had an abdominal tumor develop which was located in the left hypochondrium, extending toward the ensiform cartilage. It was hard, smooth, painful, and dull on percussion. It was firmly attached, but could be displaced laterally outward, and not downwards.

Here, evidently, was a speedy relapse which an exploratory incision, made in the hope of removing the mass, proved to be in the kidney of that side, and in the abdominal glands. The recurrence in the abdominal glands and not in the inguinal ones was confirmation of a fact which was fully brought out in a discussion of this subject at the ninth annual meeting of the American Association of Genito-Urinary Surgeons, held at Niagara Falls in May, 1895.

The latter case is in strong contrast with the preceding one as to age, the appearances of the tumor, and as to the final result. In the old man, pain, persistent and severe, was a prominent factor. In the young one, there was no spontaneous pain, there was no discoloration of the scrotum, and the tumor was soft, whereas in the old man the tumor was hard, and its naked eye appearance might be termed decidedly "malignant." Yet in the case which appeared to be the most severe, the disease proved to be benign, while in the other it was rapidly fatal.

In corroboration of the fact that a case apparently benign may have elements of malignancy and demand radical methods, take the following:

A young man, twenty-three years of age, was brought to me with the following history: When about thirteen years of age he was struck by a baseball on his left testicle, and four years later he fell astride a fence and bruised the same testicle. Following the first traumatism a moderate sized "lump" appeared at the bottom of the left testicle. It was not painful and never had been until two or three weeks before he came under observation, but it had grown slowly in size, and during the past year its growth had been more rapid than during the previous nine years. There was no history of an abnormal growth in any other member of his family. The patient, whose general health had always been good, gave no history of any urethral disease, but about a year before he came under my observation he had had a "sore" at the end of his penis, in regard to which there seemed to have been some doubt. At all events, it was treated by caustics and he had some form of internal treatment for four months. No symptoms referable to the sore followed. The right testicle was normal. At the base of the left testicle and attached to it by a pedicle, was a hard, firm tumor, insensitive on palpation; its circumference (the measure including the tissues of the scrotum which covered it) was 4¾ inches; the pedicle seemed to be a little over an inch in length and was exceedingly sensitive; it apparently sprang from the tunica albuginea, and had no relation to the epididymis.

The history of a slowly growing, painless, insensitive, and hard tumor, not a part of the testicle but springing from it, led me to the diagnosis of a fibroma, but the recent rapid increase in size and the accession of pain made me suspicious that it was undergoing some form of degeneration. Accordingly, I took him into the hospital with the intention of removing the tumor only and leaving the testis, if possible. Upon cutting down upon the tumor, the latter was found to spring from the posterior aspect of the body of the testicle and from the cord. Its surface was slightly irregular or nodular, and its pedicle seemed well supplied with vessels. Appreciating that the growth was one which might easily degenerate into some form of malignancy, I decided that it was best for the patient to remove the testicle also. This was accordingly done. The growth was subjected to the pathologist, who reported: "It is a pedunculated tumor, one inch in diameter, very firm, and white on section. Microscopic examination shows it to be a fibroma. *The tissue has in places more cells than in ordinary connective tissue, but not enough to put it among the sarcomata.* The testicle is normal."

This statement of the pathologist taken in connection with the recent clinical history of the patient, and with what is known of the pathological tendencies of the testis, seem to me to warrant the radical treatment which was adopted rather than to have the patient take the risk of further and dangerous involvement.

The Ventilation of Passenger Cars.—It is estimated that to keep a coach containing sixty persons fully supplied with pure air the atmosphere would have to be changed every eighty seconds, or something like forty-five times each hour. It is found practically impossible to raise air from zero to a comfortable temperature with such rapidity, and in consequence a compromise between bad air and low temperature is essential in cold weather.

THE TREATMENT OF DIPHTHERIA WITH ANTITOXIN.[1]

BY JOSEPH H. LOPEZ, M.D.,
OF PHILADELPHIA.

OF the many recent discoveries, none has provoked more controversy than diphtheria antitoxin, in which respect it bears a strong resemblance to vaccination. Able men have written pro and con on the subject, both sides being governed by honesty of purpose, but each, as is human, viewing the subject from his own standpoint. Men are broader and much more liberal in their views to-day than they were in olden times, which tends to give both length and breadth to a controversy. In the days of Jenner, prominent men wrote in fierce condemnation of what they termed the vagaries of vaccination, and were in turn the recipients of congratulatory letters from others equally as prominent as themselves. In face of all this, Jennerism has stood as the triumph of a century. In the present discussion, men of undoubted ability are arrayed against antitoxin, but their number is small. In striking contrast with these is a class more numerous, who evince by their writings total ignorance of the subject, and are guided solely by their prejudices. In an age so liberal as this, an open discussion serves to bring to the surface the true merits of a remedy, and facilitates in giving it the proper place in therapeutics.

Through the courtesy of the H. K. Mulford Company, I was permitted to visit their biological laboratory and witness the process by which diphtheria antitoxin is secured. Of this privilege I heartily availed myself, in order to obtain the data for this paper. To understand how antitoxin is produced, it is necessary to have a clear conception of five terms. These are: *germs*, *toxins*, *serum*, *antitoxin*, and *units*. They must be clearly distinguished, one from the other. Antitoxin (upon which alone depends the efficacy of the remedy) is one thing, and serum (its vehicle or menstruum) is another. Antitoxin does not exist in any appreciable measure in the blood of the horse until it receives the treatment which will be described in this connection.

The germ of diphtheria is the specific cause of the disease, while the toxin is a complex poison produced by the germs. If germs of diphtheria are injected into a susceptible animal, they will produce diphtheria; if toxins are injected, they will cause acute poisoning. In the laboratory the toxins of diphtheria are separated from the germs by a very delicate filtering process. The toxins only are used in treating the horse that is to yield the antitoxin. It will thus be observed that the injections do not produce diphtheria in the horse. They could not do this, for the germ which is the sole cause of diphtheria was first removed. The toxins separated by the process of filtering must conform to a certain high standard of virulence or be rejected. This standard is obtained by experimenting on guinea-pigs. It must be so toxic that an injection of three-tenths to 1½ minims will prove fatal within thirty-six hours. This quantity is called the minimum fatal dose. One standard or immunizing unit indicates that potency of a given quantity of antitoxic serum which will neutralize ten times the minimum fatal dose of standard toxin in a guinea-pig.

If a moderately large dose of toxin were injected for the first time into a horse, it would sicken and die. The initial dose, however, is made very small, only 10 or 15 minims being given. This dose is gradually increased and repeated at intervals of six or eight days, for about three months. While the horse is found to fret considerably after the first dose, at the close of the period of treatment, when a trial bleeding is made, he will receive an injection more than three hundred times as large as the first one with impunity. During this treatment nature's antidote against the poison injected is poured into the blood in such quantities as to make the serum of this blood a remedy *par excellence* against the same poison in the system of the victim of diphtheria. If the trial bleeding shows the presence of sufficiently large quantities of antitoxin, the animal is freely bled and the serum separated. When this is carefully preserved against putrefaction and other bacterial contamination, and the unit strength ascertained, the remedy is ready for use.

In the treatment of diphtheria the most important step is to make an early diagnosis, and the next is to give antitoxin in sufficiently large doses as soon as the diagnosis is made. You are all familiar with the characteristics of typical diphtheria. The whitish-gray, leather-like membrane, superimposed apparently upon the mucous membrane, attended by fetor, and tending to become darker as it spreads and the malady progresses, can tell but one story. My observation is that the more rapidly the membrane spreads, the more malignant is the type of diphtheria, and the greater the danger from early toxemia. To illustrate the process of invasion and the physiological effects of antitoxin, I beg to cite a case of more than usual interest as regards the rapid extension of the membrane (See illustration), as well as the prompt and decisive action of antitoxin.

The patient, a girl of five years of age, was brought to my office September 10th, at 7.30 P.M. Examination of the throat revealed a small white spot on the right tonsil (Fig. 1). The following morning this white patch had extended, forming a continuous white line from the right tonsil across and around the uvula to the left tonsil (Fig. 2). The diagnosis was evident. I subsequently learned that another child, a boy of seven years and a brother of my little patient, had died from diphtheria after three days' illness, and was buried the day I first saw the little girl. A 5 P.M. I injected 1000 units of Mulford's Potent Antitoxin; at 10 A.M. of the following day the grayish-white line was displaced by a red line (Fig. 5), the red line of demarcation indicating that the healing, or neutralizing, effect of the remedy had commenced. When this red line was once gained, the membrane disappeared as rapidly as it had appeared. At 5 P.M. of the same day fully one-third had disappeared, while after twenty-four hours, scarcely a trace remained. All the symptoms began to ameliorate within twelve hours after giving the injection. Only one injection was found necessary. The supplementary treatment was that which I generally employ. This consists of calomel in repeated doses till the alimentary tract is cleared, sprays of peroxid of hydrogen, stimulants, and general tonics, according to the special indications of the case.

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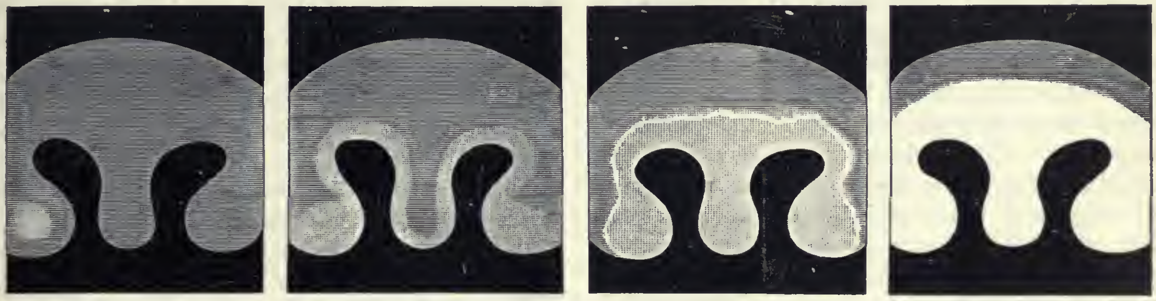
[1] Read before the Associated Physicians and Surgeons of the Charity Hospital, Philadelphia, January 2, 1897.

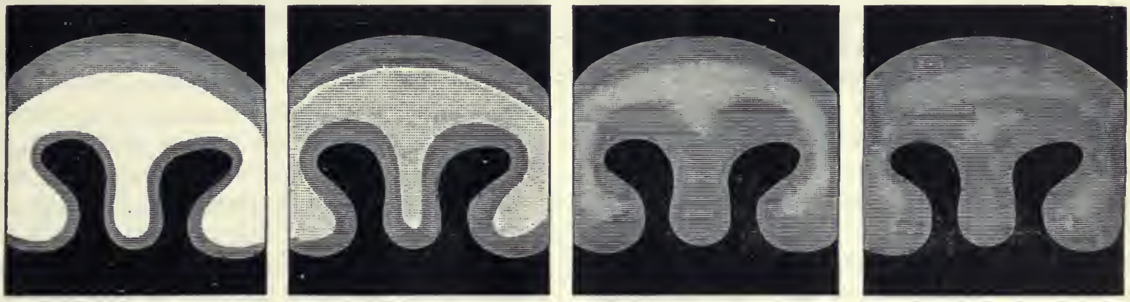
Fig. 1. Fig. 2. Fig. 3. Fig. 4.



September 10. 7.30 P.M. — September 11. 9 A.M. — September 11. 2 P.M. — September 11. 5 P.M.

ANTITOXIN INJECTED SEPTEMBER 11, AT 5 P. M.

FIG. 5. FIG. 6. FIG. 7. FIG. 8.



September 12. 10 A.M. — September 12. 4 P.M. — September 13. 9 A.M. — September 13. 5 P.M.

DIPHTHERIA IN A CHILD AGED FIVE YEARS, SHOWING RAPID GROWTH OF MEMBRANE ON TONSILS, UVULA, AND SOFT PALATE, AND ITS SUBSEQUENT RAPID DISAPPEARANCE UNDER THE USE OF ANTITOXIN.

In the laboratory the curative dose required to save a guinea-pig is determined by mathematics. Both the quantity and the virulence of the diphtheria toxin floating in the blood current of the animals are accurately known. From these factors the bacteriologist readily determines the number of immunizing units needed to save the animal. In clinical practice the physician has no power to determine either the amount or the virulence of the toxin absorbed into the system. He has not even the power to make an approximate estimate. All he can know is that, all else being equal, the more extensive the local lesion the more profound will be the degree of toxemia resulting and the earlier will fatal toxemia appear. Because of this it follows that the initial dose of antitoxin should be efficient. Antitoxin is an innocuous therapeutic agent. Should the dose be more than is absolutely needed, no harm will follow. The case will be fully met and but one injection be needed; on the other hand, if the dose is inadequate, the unneutralized toxins may go on to produce fatal results. It is not well to rely solely upon antitoxin, since there are always indications for treatment which can only be met by other remedies. In two of my most malignant cases, however, I had to rely entirely on the antitoxin, as the stomach was too irritable to bear either food or medicine. Though the patients (three and five years of age) were much depressed by the disease I injected in each case in two doses, with an interval of twelve hours, 2500 units of antitoxin. Besides this I used only the spray of peroxid of hydrogen, until tonics and stimulants could be retained. The recovery was complete in both cases and without interruption, but less rapid than when the antitoxin was administered in sufficient doses in the early stages of the disease. In the early stage from 600 to 1000 units is usually sufficient, but when seen in an advanced stage 2000 units should be injected at once, and the dose repeated in ten or twelve hours, if the progress of the disease is not arrested. The danger from diphtheria in advanced stages is great, but there is no danger from an overdose of antitoxin if a reliable preparation is used.

From the report of the American Pediatric Society on the use of diphtheria-antitoxin, published in the MEDICAL NEWS July 4, 1896, I take the following: "One of the most striking features, developed by the collective investigation committee, is the widespread employment of antitoxin (over 600 physicians submitted reports). The general inference to be drawn from the report as a whole is that the antitoxin treatment of diphtheria has proved so efficient that there is no longer any doubt of its permanency as a therapeutic measure, but that it bears two pronounced elements of uncertainty. The first is the amount of the dose; and the second, and still more important one, the quality of the serum."

From the MEDICAL NEWS, December 19, 1896, I quote the following: "The MEDICAL NEWS purchased nineteen different samples of serum (foreign and American) in the open market, in six different cities of the Union. After the labels had been removed and numbers substituted, they were submitted to Professor A. C. Abbott of the University of Pennsylvania for examination." From Professor Abbott's report I condense the following: "The majority of the samples exhibited the average required strength. Four were unusually rich in protective substance, while in three there was a relative deficiency of antitoxic properties. Some of the samples proved to be of unusual strength, while others were shown to be so poor in antitoxin as to demonstrate their comparative uselessness for therapeutic purposes. In some instances there was great discrepancy in the actual strength and in the advertised strength. Certain of the samples from the same manufacturer, purchased in different markets, at the same and different dates, showed a wide variation; other samples retained their strength absolutely from three to twelve months, while some contained only about two-thirds of their original strength at the end of three or six months."

Thus we have an explanation of the conflicting results published of the antitoxin treatment, apart from the question of *time*, *quantity*, and *method* of administration.

The Health Bulletin of the Tennessee State Board of Health, commenting on the investigation of the American Pediatric Society, says: "The report affords very strong testimony in favor of the treatment of diphtheria with antitoxin. The grand total gives 5794 cases, with 713 deaths—a mortality of 12.3 per cent., including every case returned; but excluding 218 cases that reports show were moribund at the time of the injection, or died within twenty-four hours of the first injection, there remained 5576 cases, with a mortality of 8.8 per cent. Of 4120 cases injected during the first three days, there were 303 deaths—a mortality of 7.3 per cent., including every case reported; but if from these we deduct the cases which were moribund at the time of the injection or died within twenty-four hours, we have 4013 cases with a mortality of 4.8 per cent. Behring's original claim that if cases were injected on the first or second day that the mortality would not be more than five per cent., is more than substantiated."

In conclusion, permit me to say that, to save your time, I have selected only the prominent points and deductions from the above reports, and have endeavored to present them as briefly as possible for your consideration. While my personal experience with antitoxin can add but little to the many cases recorded, yet I would state that for some years I have been associated with three institutions, containing in all about 800 children. I have thus been afforded the opportunity of witnessing the effects of many remedies suggested for the cure of diphtheria, and must say that, in an experience of over twenty years, no other remedy I have ever employed gave such prompt, marked, and lasting results as antitoxin. The characteristic red line which makes its appearance after the successful injection of antitoxin is of great significance. It enables the physician confidently to assert that the disease is checked, and the poison which threatened life neutralized.

Such has been my experience with antitoxin, though limited to thirty-seven cases, with perhaps more than double that number of immunizing doses administered. Of the former, all recovered excepting three, which occurred in one of the asylums, in cachectic children, closely following a grave type of measles. These did not seem to be affected by the antitoxin, but rapidly progressed to a fatal termination. In the other cases, a general amelioration of all the symptoms was noted early, and the progress to recovery was both speedy and complete. With few exceptions, but one dose of antitoxin was required. Of those immunized, not one contracted diphtheria. As I invariably resort to immunization, it has been my fortune not to have a second case of diphtheria in the same family since using antitoxin. In one instance, after drawing the usual curative dose into the syringe, I found a small quantity of antitoxin (about 250 units) remaining in the bottle. This was enough to immunize the only other child in the family. After carefully sterilizing my syringe, I injected it into the little fellow, with the happiest results. In six cases, the respiration was so greatly impeded when I first saw them that intubation was necessary to prolong life and give the antitoxin time to act. Four of the six cases recovered.

In view of the results of the examination of the antitoxin, as published by the MEDICAL NEWS, the physician can not be too careful in the selection of his antitoxin. When one physician requires from two to ten injections to do what others can accomplish with one or two, the fault must be with the product he is using. Whilst it would have been of great value had the MEDICAL NEWS published names with the results of its investigation, we must infer that there were good reasons for withholding them. We can therefore only express our appreciation of the good work accomplished. My own experience is restricted to American antitoxin. I have used Parke, Davis & Co.'s, and H. K. Mulford Co.'s, and found them both efficient and reliable, and in view of the results of the bacteriologic examination as conducted by the MEDICAL NEWS, I have no inclination to "grope in the dark" by making a change. The latter house has introduced a highly concentrated serum which I prefer since it removes all objections to the serum treatment, due to the large quantity of serum to be injected, and is in my opinion, the greatest improvement yet made in diphtheria antitoxic serum.

DIASTASE IN THERAPEUTICS.[1]

BY C. C. FITE, M.D.,
OF NEW YORK.

THE sprouting of a seed was considered, until quite recent times, a great mystery; not until diastase was discovered could we properly understand why a seed after being placed in a moist soil began to develop into a plant after having lain dormant perhaps for years. Under proper conditions, the life endowed germ is no longer a sleeping unknown quantity, but is an active principle, and the process of development begins.

The sprouting of seed is a very interesting subject for scientific study—this awakening of the germ life, by the influence of heat and moisture, as is the action of diastase in converting the starch of the seed into maltose, which afterwards becomes fibrous or cellular tissue. We will not go into a discussion here in reference to the secretion by the plant of fluids which, acting through the delicate roots, absorb and utilize the soil elements; of the important work done by the leaves in taking carbon from the atmosphere; and by these and other processes completing the growth of the plant and eventually reproducing the seed to continue the life of the species indefinitely.

Let us now leave the plant and refer to the important factor in the growth and development of animal life—the ptyalin of the saliva, a product analogous in many respects to diastase. Just as nature places diastase in the grain to produce the changes leading up to a higher growth, so she gives animals ptyalin to convert the starch and perhaps other foods into assimilable material for nourishment, for heat, and a reserve supply of fat. I use the words nourishment, heat, and fat, advisedly. The starch so converted is nourishment, and it is the basis of our caloric energy. Our supply of fat comes mainly from the starch changed into maltose by the ptyalin, supplemented by the pancreatic secretions, and it is changed into oil later on in the process. This oil is not only utilized for heat but stored in the tissues as a reserve supply.

It is well to bear in mind that few carnivorous animals take on a great degree of fat; grain eating animals do. Give swine all of the fat and oils they can eat, and they will not gain in weight half as quickly as when fed on grain alone.

The function of ptyalin is to convert starch into dextrin and maltose, this being the preliminary step, and it goes on in the normal stomach for from thirty to forty minutes after the close of an ordinary meal, when the acid peptic digestion stops the diastasic process. The duodenum holding the pancreatic and other secretions takes up the partially changed starch and completes the conversion. We need not follow the process beyond this point.

It has long been observed that we do not get altogether satisfactory results in the treatment of amylaceous indigestion with pancreatic extracts. This is probably due to the fact that the amylopsin of the pancreatic juice and the various other duodenal enzymes are intended more for completing and finishing the changes already begun by ptyalin before the peptic digestion supervenes, and are not adapted for this preliminary conversion in the stomach. In other words, they are not suitable for beginning the conversion in the food mass as found in the stomach—acting, we might say, on the mass later when it is an acid body, during the time it is being changed from an acid to an alkaline reaction, instead of on the alkaline or neutral mass when it is being changed into an acid mass. We see, therefore, that while ptyalin and amylopsin are practically identical in their action on starches, nature intends them to act under different conditions and at different periods of the digestive process. Therefore, we should not give pancreatic extracts with the expectation that they will render desirable service in the stomach, but should rely either upon increasing the supply of ptyalin by slowly masticating the food, or by giving a ferment having similar properties to ptyalin; this we have in diastase.

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[1] Read before the New York Medico-Surgical Society, January 4, 1897.

From the time of the discovery of diastase in malt until quite recently, many attempts have been made to produce it in an isolated form economically enough to be used freely in medicine, without having to give it in the form of the semi-solid malt extracts which has been the only reliable form of it readily obtainable by the profession, as the liquid malt extracts do not contain an appreciable amount of diastase.[2] The disadvantage in its use in malt extracts is that we have to give a large bulk of the extract to get a very small quantity of diastase; then too, the extract contains fermentable sugars and extractive matters which may not only be of no value, but may give rise to fermentation in the stomach or intestinal tract.

So far the only person who has succeeded in producing an isolated diastase economically and on a large scale, is Jokichi Takamine, the Japanese chemist, (*London Lancet*, May 25, 1896). This investigator received his scientific education at the Glasgow University. He devoted some years to the study of malting and the production of diastase and other ferments, and upon his return to Tokio was fortunate enough to find that Eurotium oryzæ was what he desired. The process he finally perfected is in brief as follows: The seed of the Eurotium is sown on moistened and sterilized wheat bran. The growth is rapid, and after the plant has reached maturity he calls the bran with the growth on it "Taka-Koji." Upon examining this growth under the microscope it is found that the roots of the Eurotium which have penetrated the bran are covered with crystals of pure diastase. These diastase crystals have the property of converting the starch of the bran for the nourishment of the plant. Takamine named the diastase so produced, Taka-diastase. In preparing this diastase for use in medicine it is necessary to get rid of the spore. This is done by percolating the Taka-Koji with water, and adding to this solution of diastase, alcohol, when the diastase is precipitated and the activity of the spores destroyed. It is then a simple matter to further purify the diastase and preserve it in a dry powdered form indefinitely.

This diastase, owing I presume to it being an isolated substance, acts much quicker than the diastase found in malt extracts. It will convert 100 times its weight of starch in ten minutes under proper conditions; if the process is continued for three hours, 1500 times its weight. It is therefore evident that its amylolytic-converting power is quite marked, and the theoretical position that it would prove of value in the treatment of amylaceous indigestion has been verified by careful observers many times over.

Professor Leo, of Bonn, claims that this diastase exerts its action in a higher degree of acidity than was first claimed by those of us who had experimented with it, and that it is, therefore, superior to ptyalin in its starch-converting power. He has employed it with benefit in cases of deficient salivary secretion, and also in hyperacidity of the stomach.

Dr. W. S. Christopher, of Chicago (*Therapeutic Gazette*, March, 1896), holds that flatulence is due to microörganisms which attack unchanged starch and give rise to fermentation, and that it is therefore important in these cases to pre-digest the starch in the stomach, and the more complete this process, the less food there is for the microörganisms to act upon in the duodenum. He finds that the administration of diastase in these cases gives satisfactory results.

Dr. R. W. Wilcox, of New York, has given very close attention to the therapeutics of this question, as shown by two papers he read some months ago, one before the New York State Medical Society, January, 1896, and one before the New York Academy of Medicine, February 18, 1896, both papers being published in the MEDICAL NEWS.

Other favorable clinical reports which have attracted my attention, which may be mentioned here, were published in the *Journal of the American Medical Association* for August 15, 1896, by Dr. T. H. Allen; in the *Medical Age* for July 25, 1896, by Dr. F. Spencer Halsey, and in the *Therapeutic Gazette* for September 15, 1896, by Dr. Wm. A. Walker.

In the practice of some friends, who have reported the matter to me for elucidation, this form of diastase seems to have other properties than its action on starch. In one notable case in which pepsin and other methods of treatment failed to give any benefit, although every symptom and test seemed to indicate that it was an undoubted case of albuminous indigestion, the result was not only palliative but curative. I have endeavored to have this matter settled by laboratory experiments, but so far the results have not been entirely conclusive, so any theory on this question for the present must be based mainly upon clinical evidence. This diastase does, as was shown by the experiments referred to, *disintegrate* albumens, but the proteolytic action *apparently* stops short of the production of albumoses and peptones. As to what takes place in the intestinal tract of course we cannot yet say. It is altogether probable that the benefit in these cases is due to the promptness with which the first period of digestion is carried on and the conversion, instead of the fermentation, of the starchy foods, leaving the second process, the acid peptic digestion, to go on normally without being interfered with by deleterious products; and the partial disintegration above referred to doubtless promotes the activity of the gastric juice by giving it freer access to the particles of albumen.[1]

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[2] *Boston Medical and Surgical Journal*, December 31, 1896, p. 669.

We should always bear in mind that we have from thirty to forty minutes after the close of an ordinary meal in which the action of ptyalin or diastase will continue before the acidity of the stomach contents reaches the point at which such converting power is impaired or destroyed. The proper theory for the administration of diastase is that it supplements the ptyalin of the saliva, and the more thorough the preliminary digestion in the stomach, the less work there is to be done in the duodenum. The formerly prevalent theory that pancreatic extracts and diastase ought in some mysterious way to find their way through the stomach into the duodenum, and there begin their work, is too absurd to be entertained. (See Dr. Walker's article above referred to.) I am indebted to Dr. Henry Dwight Chapin for information in this connection (*N. Y. Medical Journal*, September 16, 1893), the results of some elaborate experiments which he had made in the Post-Graduate Laboratory in 1893. The experiments were made with a product containing diastase; the stomach was washed out, and after the subject had been properly fed the diastase was administered in certain cases and omitted in others. The report made to Dr. Chapin by the chemist in charge of the work was, that, when the stomach was emptied forty minutes after the administration, the percentage of food remaining in the stomach at this time averaged, when diastase was not given, 52.02 per cent.; with diastase, 29.2 per cent. This showed very conclusively the action of the diastase in the stomach. An analysis of the solid food remaining in the stomach showed that when diastase had not been administered 7.02 per cent. was undissolved; when it was given, only 3.45 per cent.

Experiments with diastase have not up to this time been as satisfactorily conducted as those made with pepsin, for the reason that diastase is a sensitive body, and the value of any laboratory or test-tube experiments is apt to be contradictory, unless proper precautions are taken as to the degree of heat used, and because the various brands of starch found in the market vary in reaction and in their sensible properties. It is to be hoped that we will soon have definite tables in use for this work, so that all experiments being made by a uniform standard the results can be more intelligently compared and studied.

I might add in conclusion that the therapeutic properties of diastase have not yet been as thoroughly investigated as could be desired. A good deal of careful work is now being done by investigators in this and other countries, and I am confident that the literature of the subject will be enriched very greatly in the near future.

So far little has been done with diastase in practical medicine beyond its use in typical cases of amylaceous indigestion. What we may expect from its employment in partially converting the starch of barley water for infant feeding remains yet to be determined, but I am very hopeful of its use in such cases. The fact of the casein of cow's milk being so much more dense and liable to form tough curds than human milk, has led me to hope that if we partially convert the starch of the barley water, it will become not only a mechanical diluent for milk, but a readily absorbable food as well, which will nourish and not give rise to fermentation and flatulence.[1]

Some time since I witnessed several experiments in bread-making made by Mr. C. Von Egloffstein, then of Yonkers, now of Brooklyn, N. Y., to determine the value of diastase in rendering bread more soluble. His conclusions were that the soluble matter in ordinary bread in water at a temperature of 100° F. represented at the end of an hour fifteen per cent., whereas when a proper amount of a product containing diastase was added to the bread before baking the soluble matter under the same conditions was forty per cent.

It is more than probable that diastase will play an important part in the therapeutics of the future.

ABSTRACT OF DISCUSSION.

Dr. W. L. Stowell: I wish to express my pleasure at listening to this paper. For the last five or six years I have been greatly interested in the various forms of indigestion and the remedies supposed to overcome them. Most of the diseases we are called upon to treat, if not due to direct infection, are due to some difficulty in the digestive tract. These difficulties are either fermentation from pathogenic organisms or deficiency of digestive ferments. Antiseptics, while they prevent the formation and development of germs, and so prevent indigestion to some extent, do not assist the digestion of food in a weak digestive tract. Therefore we need to help the patient by first selecting suitable food, and secondly, by helping him to digest what food is taken in. Patients who complain of bloating and pressure an hour or two after meals, and who complain also of constipation most of the time, can, as a rule, be greatly helped by diastase alone. If this does not work well alone, it will do better when combined with salol, or some similar antiseptic. The more I have used these remedies the better I have been pleased with them.

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[1] Since this paper was written, I have been informed by Mr. F. A. Thompson, a skilful chemist, who has given close attention to this subject and performed a number of elaborate experiments with diastase and other digestive ferments, that he has found that Taka-diastase does undoubtedly not only disintegrate albumens but produces albumoses and peptones as well. This is an important and interesting discovery, and perhaps confirms the work of the German chemist Bezanes, who found that in producing diastase from malt, a by-product, which he named peptase, was formed, which acts on albumen. It is therefore evident that as there is formed in grain a product to change the albumen of the grain as well as the starch-converting ferment, Eurotium has a ferment similar to peptase for converting vegetable albumen for its nourishment. The peptase produced in malting is extremely slow in its action, due perhaps to its being interfered with by the thick gummy malt products.

[1] See Dr. Chapin's remarks in the discussion following.

I recall an interesting case of vomiting during pregnancy. The patient suffered from inability to digest both proteids and starches, but particularly the latter. She suffered very greatly from the resulting distension, but this was overcome by the administration of Taka-diastase. After awhile the stomach rebelled, but then, by washing the stomach, it became possible to return to proteids. One or two patients have come to me from a distance suffering from an aggravated form of starch indigestion, and these have done exceedingly well upon diastase. One of them improved with diastase alone; the other did better when it was combined with salol. Our trouble with the digestive ferments is that we do not pay sufficient attention to the different forms of indigestion, usually preferring to depend chiefly upon a routine dose of rhubarb and soda.

Dr. William A. Walker: I have had the most satisfaction from the use of the Taka-diastase. One advantage is that it is tasteless. I prefer to give it in capsules, because if administered in the dry form the patient usually complains of a dryness of the throat.

The question is often asked: What is the advantage of giving the diastase? It has been argued, principally on theoretical grounds, that the giving of an artificial digestive agent cannot produce a cure, but that it simply does a certain amount of work which the stomach should perform. I think Dr. Fothergill spoke of this practice as "pauperizing the stomach." This may be true in long-standing cases, but it certainly does not apply to the more acute cases. Most of its good effect is produced by supplementing the digestive ferments of the stomach. I have found, in certain cases, that in washing out the stomach a portion of the food ingested the previous day was present. I have then given the diastase, and have found, on subsequent washings, that a good portion of the food had been digested. The cure is effected, I suppose, in this way. Most of the trouble in dyspeptics is probably due to the leaving over of some undigested food from one meal to another. The diastase prevents this.

Dr. George Tucker Harrison: This is a subject in which I have taken a great interest for some time. Like most clinical observers, I often meet with these cases of indigestion, which in former times we erroneously looked upon as due to proteid instead of to amylaceous indigestion. I therefore hail with pleasure, as a great addition to our therapeutical resources, this new diastase—a substance which certainly appears to be worthy of extended and careful trial.

Since my attention was called to this new diastase, I have used it considerably, and have been much gratified with the results of my observations. One case comes to my mind. A lady of fifty-five years had taxed my therapeutic resources to the utmost. I had used, among other things, a preparation of nux vomica, pancreatin, and fel bovis inspissatum. This utterly failed. I began then the use of Taka-diastase, and the result was truly brilliant. The woman suffered from the usual symptoms of intestinal indigestion; flatulence, colicky pains after eating, mental depression, insomnia, etc. In other cases I have met with equally good success.

Dr. Henry Dwight Chapin: There are two well-known methods of acting on the casein of cow's milk for infants, *viz.*: (1) the mechanical, and (2) the physiological. The mechanical method consists in adding some diluent, such as barley water, or the old "flour ball." I think that, on the whole, we get better results by mechanical means than by peptonizing the milk. When the method of peptonizing milk was first brought out, most of us thought that the problem of infant feeding had been largely solved. I tried the method with much enthusiasm, yet I found that the simple peptonizing of milk, did not, on the whole, give very good results. In some difficult cases it certainly does succeed, but this has not been the rule in my experience.

This has led me to go back to the old method of attenuating the milk by the addition of cereals. We all know that young infants cannot digest much starch, although they can digest some by means of the mouth secretions and the secretion of the intestinal mucous membrane. I made a series of experiments at the laboratory and at the bedside regarding the action of diastase on barley. I think we succeeded in this way in getting the good effect of the attenuating qualities of the barley, and at the same time, in reducing to a minimum the bad effects of the starch. Clinically, this method gives good results in very many cases. The process is not a difficult one, and this, in itself, is a recommendation for the method, for in infant feeding it is highly important that the rules for the preparation of the food shall not be complex. Even skilled nurses often make mistakes in the process of peptonizing milk.

Dr. Morris Manges: My own experience strongly corroborates that of others as to the value of diastase in infant feeding. How it acts, I do not know, but I know that it does act. With children who do not thrive on breast milk, or substitutes for it, I can say that the addition of Taka-diastase has given me uniformly good results. This is a simple clinical fact.

I believe the use of preparations of diastase has been of service in one way particularly, *i. e.*, in calling our attention to the importance of the saliva in digestion. We had almost lost sight of its value, notwithstanding the fact that it is secreted in such large quantities. We must admit that so far as experimental work has added to our knowledge, we are still much in the dark regarding this important fluid. Just to what substance in the saliva the action on the starch is due, aside from the ptyalin, we do not know. Certainly it is not the ptyalin alone. The experiments of Jawein of Vienna, and of others, have shown that the ptyalin was lessened in certain acute infectious diseases, diabetes, and in renal and cardiac diseases; but strange to say, it was not at all lessened in tuberculosis. On the other hand, experiments by Friedenwald have shown that saliva can be boiled and the ptyalin thus killed, and yet the saliva will have a beneficial action in promoting starch digestion. It is evident, therefore, that other constituents besides ptyalin are at work.

Now, by giving Taka-diastase, can we really replace the saliva? That a ferment is, after all, not the original digestive fluid is a point which is very often lost sight of. Every single digestive juice shows us that there is something more than the ferment which is active. Just what important *rôle* is played by the carbonates, and by the nascent oxygen in the mouth, is not yet known.

Dr. William Henry Porter: There is one idea which is very prevalent in connection with starch, and which I think is a very erroneous one; and that is, that starch is a fat-producing element *per se*. I do not believe the animal organism ever converted starch into fat. If what the chemists say is true, that statement is a correct one. They say that when you commence to split up the starch compounds in the animal organism, they tend to become less complex, and that synthesis does not occur in the animal organism. Therefore, I believe we must give up the idea that fat was ever made out of starch. The only reason for that belief was an experiment made many years ago, in which two pigs were taken from one litter, both pigs being of about the same weight. Pig No. 1 was cut up and a quantitative estimate made of the fat. Pig No. 2 was fed on starch, and nothing else for a week or ten days. It was then killed, and a quantitative analysis showed a little more fat than in Pig No. 1. Consequently, the statement has been handed down for years that starch is converted into fat. I believe that all the fat we get in the animal economy comes from the katabolic destruction of proteid bodies, and I think we have pretty good clinical evidence of that. Were we to cut off every bit of starch and use simply proteids, sugar, and fat, these people, in the absence of starch, will progressively increase in weight. This comes, I believe, from a better utilization of the proteid elements, and not of the starch and fats. I believe that the fats and the starches are simply heat producing elements. A proper adjustment of the starches and fats is necessary, and when we cut off the starches, I believe we must substitute a little alcohol to generate the heat in about the same proportion as would be generated if we used the starch. A certain number of grams of starch are capable, for instance, of producing a certain amount of heat. If we deprive the system of that amount of starch, we must get that equivalent of heat out of alcohol.

If we consider many of these numerous little points I think we can very satisfactorily manage these cases of indigestion. Personally, I do not like the terms "albuminous," or "amylaceous," or "fatty" indigestion. I think the difficulty is either a gastric one or an intestinal one, and, therefore, in my opinion, these are the only two kinds of indigestion that we should consider from a clinical standpoint. The sooner we come to this simple method of considering the subject, the quicker we shall arrive at a more rational basis of treatment.

Dr. Charles Henry Brown: We have heard to-night regarding the use of diastase in the feeding of infants. Practically, it aids in the digestion of amylaceous substances. I have used for years some form of diastase in the artificial feeding of infants, from birth until they are able to take food independently of the bottle, and I think it is a very great aid to us in the frequent but puzzling idiosyncrasies of infantile indigestion. The question Dr. Porter has raised as to whether starch alone makes fat or flesh is not one for the discussion—it is rather the chemistry of the action of diastase, which undoubtedly produces a certain amount of flesh. If we give pure alcohol, we do not see it; if we give malt, we do see it. People at the time of life when the heat-producing mechanism is most active, put on flesh. A certain force produces this flesh and a storing up of fats.

In Taka-diastase I think we have a better preparation for treating certain forms of indigestion in adults than any other. It is a powder, and the diastase is measurable. The addition of alcohol interferes seriously with the digestive action of diastase. All of us know that malts which contain a large quantity of alcohol often increase the distress of dyspeptics. There can be no question that Taka-diastase is a remedy which we can use either internally, or in pre-digesting food. We can also use it in aiding nutrition. Undoubtedly, the use of diastase increases nutrition, probably by stimulating the proteids and increasing heat-production by its chemical action on starch. I have found that delicate infants, when given Taka-diastase in proper quantities, will show the results of this stimulant action, as well as delicate adults. When given symtomatically, it relieves the distress experienced in the various forms of amylaceous dyspepsia. This seems to me to cover the whole subject, so far as it is at present known.

Dr. Grover C. Arnold: What are the maximum and minimum doses of Taka-diastase for adults and infants?

Dr. Fite: In experiments at the laboratory, it seemed that one grain converted 1500 grains of starch in three hours, 100 grains in ten minutes. After extended observation it was determined that 2½ grains, given during a meal, was an average dose for an adult. Some physicians have used five grains at a dose, but this has appeared to cause too rapid a conversion of the starch. It seems that the doses for infants are proportionately larger, *i.e.*, one grain for a child of two years.

Dr. John Blake White: I should like to speak with reference to the practical aspect of the subject. Theory is beautiful indeed, and is most fascinating, but actual results, and the practical side are, after all, more important. I cannot discuss chemistry with Dr. Porter, but I can speak of the results obtained in practice. These substances certainly do produce fat. Whether this can occur from the chemist's standpoint, or not, I cannot say, but the fact remains.

I desire to add my testimony to the value of assisting faulty digestion by the means that have been discussed here this evening. My experience with Taka-diastase, and other digestive ferments, tends to confirm the position taken by the essayist. I have always looked upon my cases from a purely practical point of view, endeavoring to ascertain what was really at fault, and then remedying this. I endeavor to regulate the diet. In cases where the indigestion appears to be due to the defective digestion of starchy matter, we can resort with advantage to the use of preparations of diastase. The weight of authority certainly favors such a view.

CLINICAL MEMORANDA.

A CASE OF AGALACTIA.

By J. IVES EDGERTON, M.D.,
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Agalactia, or the complete absence of milk secretion in the puerperal woman, is very unusual. Norris, in the "American Text-Book of Obstetrics," says: "So rare is this affection that its existence has frequently been doubted. Usually there is only a deficiency, which may occur at the beginning, and continue through the whole period of lactation, or, more commonly, the secretion, at first sufficient, gradually diminishes in amount, or, from some intercurrent affection, suddenly disappears. The secretion of an abnormally small amount of milk may be due to an anomaly in the formation of the mammary glands, either congenital or acquired from faulty clothing compressing the glands. It is also observed in the very feeble, in women of advanced age, after premature births or still-births, or in women who carry an excessive amount of adipose tissue. Temporary diminution or disappearance of the milk occurs when there is high fever, and when inflammation of the breast is present."

The following case occurred in the service of Dr. J. J. Hull, through whose courtesy I am enabled to report it:

Mrs. E. W., aged twenty-five, born in England; primipara. Was admitted to the hospital October 26, 1896. The history she gave was as follows: Before puberty she had had whooping-cough, scarlet fever and diphtheria. Five years ago she had pneumonia; never any other sickness, except occasional attacks of muscular rheumatism. She first menstruated at the age of twelve years, her periods recurring regularly every four weeks, and lasting for six days; flow was considerable and painful for the first two days. Her last menstruation was from January 14 to 19, 1896, and she "felt life" in July. She had some vomiting at irregular periods throughout her pregnancy, but stated that she had been subject to bilious attack since childhood. She had never had a miscarriage. During February she had taken frequent doses of pennyroyal, as also some other abortifacient, but with no other effect than the production of a profuse diarrhea. Since then she had taken no medicine. After the first month of pregnancy she noticed that her breasts were slightly enlarged, and this enlargement has persisted, but at no time had she noticed the presence of milk.

On admission she said she had had labor pains for three days. The internal os admitted one finger. The next day she had a normal delivery. Her breasts were examined carefully; they were normal in size and appearance, with well-formed nipples, and seemed to contain the usual amount of glandular tissue, but not a drop of colostrum could be obtained, either by massage or by the use of a breast-pump. The day after delivery a strong baby was given her to nurse, but no milk showed at the nipples. For sixteen days after confinement, with the exception of the sixth, seventh, and eighth days, this was tried, but with the same result. The breast-pump and massage were also tried on different occasions, but absolutely no milk could be obtained. The breasts never showed any engorgement. Uterine involution and the puerperium were normal, the patient being up on the tenth day. She had no rise of temperature above normal during this period. Her baby was a female, weighing 2825 gms., and has done well on another woman's milk. Although the child was below weight, its appearance and the menstrual history of the mother would not lead one to think it premature. The patient herself is about five feet two inches in height and weighs about 120 pounds. Her family history is of interest. Her mother is living and in good health, having borne nine children, three of whom are now living; four died at about five years of age, one at eight, and one at twelve months. The patient is the eighth child, and says her mother has often told her that in none of these puerperia had she any milk, although the breasts were natural in appearance. The patient has one married sister, who at twenty-five years gave birth to a full-term child, and she, likewise, never had a drop of milk for her baby.

In this connection, what Winckel says is of interest: "Harlan, Reil, Pitschaft, Hohnbaum, and Berndt, Jr., assure us that they have repeatedly observed the complete absence of the formation of milk in lying-in women, and have found this in several successive childbeds in the same woman. . . . This anomaly may be inherited by the daughter from the mother." It will be observed that in this case none of the usual causes was present. The woman was strong and healthy, but not obese, and only twenty-five years old. She gave birth to a full-term and living child. She had no rise of temperature, and no intercurrent disease during her puerperium. She now has been under observation for over two months and no milk has appeared.

A CASE OF CARCINOMA AND SARCOMA OF THE NOSE.

By D. MILTON GREENE, M.D.,
OF GRAND RAPIDS, MICH.

GRYNFELDT says that notwithstanding the fact that the nasal mucous membrane is the most frequent seat of inflammation, malignant disease in this locality is extremely rare. Cornil and Ranvier have maintained that there is no well authenticated case of primary carcinoma of the nose. About forty such cases have been reported, but of these, only a few of the growths were subjected to microscopic examination. The diagnosis in all the other cases was made from the gross appearance of the lesion and the clinical history. Sarcoma of the nasal passage is almost as rare as carcinoma. So far as I have been able to learn, there is no recorded case of a mixed growth of carcinoma and sarcoma of the nose; indeed, it has been stated by some pathologists that sarcoma and carcinoma very rarely, if ever, are found together anywhere in the body, while others claim that they do occur together, but that the cases are extremely rare.

Mrs. K., aged thirty-two, referred to me by Dr. C. M. Kelley, presented the following history: She had had a catarrhal condition of the nasal mucous membrane for years, accompanied by an offensive discharge, for which she had been treated. The symptoms had subsided when I saw her, and she had been quite free from the trouble for some time. During the previous eight months she had had nasal stenosis, especially on the right side, together with pain and a slight discharge. Since three weeks previously the pain had increased, becoming more constant, and changing in location from the bridge of the nose and forehead, where it had formerly been, to the right eye, cheek, temple, and ear. She had had epistaxis frequently.

Upon examination, I could discover no external signs of disease, no exophthalmos or displacement of the eyes, and could not make out the presence of a growth in the orbit. The left nasal cavity was quite free, as were the post-nasal space and vault of the pharynx. The hard and soft palate were of normal color and free from inflammation. In the right nasal cavity I found the middle and lower turbinated bodies swollen, hard, and infiltrated, and they did not contract under the local application of a six-per-cent solution of cocain. The middle turbinated body was the seat of an ulcer which, macroscopically, looked like an epithelioma, having the same appearance presented by an epithelioma of the lip. Protruding from between the middle and lower turbinated bodies, in the region of the *ostia maxileare et ethmoidea*, there was a growth as large as half of a small almond. The ulcerated turbinated covering bled freely when touched with a probe, but the growth did not bleed so readily. It looked like a vascular polyp. It was grasped with a pair of small forceps, but being friable, it broke down and left a large bleeding base. I had been impressed by the history of the case, notably that of the pain and bleeding, and had thought that the disease was malignant. Of this I was more convinced after attempting the removal of the growth. I then inquired into the family history, and found that her father had died of cancer of the stomach.

The patient went to her home. I informed Dr. Kelley and the patient's husband of what I had found, and said that I believed the disease to be malignant. I saw her at her home twice subsequently, having been called on account of the pain and continued bleeding. Several physicians were consulted at about that time and gave various opinions, mostly to the effect that the pain was caused by the removal of the growth. Nearly three months later, as she had been steadily growing worse, I was called in again, and found that the growth in the nose had returned and was larger than when I first saw her. There was exophthalmos of the right eye, the organ being displaced markedly to the temporal side of the orbit. A growth could then be felt in the orbit in the region of the ethmoid cells. It was quite evident that the growth did not originate in the antrum of Highmore, as in such a case the eye would have been displaced upward. An operation was requested, and I consented to perform it, after telling them of the liability of the disease returning.

On January 27, 1896, I operated by making an incision one inch long at the lower border of the supra-orbital ridge, extending to the nasal bone, then carrying a second incision vertically from this point to the inner side of the lachrymal sac, thereby exposing the growth. Passing my finger into the orbit and using it for a guide, I passed a sharp curette through the nose and scraped away the growth, together with the middle turbinated body, the ethmoid cells, and a portion of the sphenoid bone, which had been softened by the disease. There was quite a sharp hemorrhage. Some shock followed the operation, but the patient soon rallied. The external wound healed quite promptly, except a very small hole. The temperature rose to 100° F. but once; the remainder of the time it was normal.

The patient was relieved of her pain for about one month, when the growth showed signs of returning. The pain, which before the operation had been severe and constant, returned with the return of the growth, and she begged for another operation, which I performed on February 28th. This time I operated entirely through the nose and scraped away the remaining turbinated bodies and a portion of the ethmoid, together with all of the diseased tissue within reach. The shock was extreme, and she came near dying on the table, but she finally recovered from the effects, and went on as she did after the first operation.

The disease promptly returned, and she died a month later. Before death she was delirious for three days, and became almost completely blind. The growth was examined by three pathologists—Dr. George Baert, Dr. J. B. Whinnery, and a member of an association of pathologists in Chicago, neither knowing what the other had found. Each and all found mixed-celled sarcoma and carcinoma. The autopsy, which included only the brain and interior of the skull, was conducted by Dr. Sharp. The brain was fairly healthy, the dura being somewhat inflamed. The right orbital plate of the frontal bone had been entirely absorbed, and the left orbital plate was softened. The immediate cause of death was not ascertained.

SPECIAL ARTICLE.

THE NEW YORK ACADEMY OF MEDICINE—CELEBRATION OF ITS SEMI-CENTENNIAL ANNIVERSARY.

THE fiftieth anniversary of the inauguration of the Academy of Medicine was celebrated January 29th by commemorative exercises held in Carnegie Hall and a social gathering in the reception rooms of the Academy. This jubilee year has awakened anew the recollections of the circumstances that led to the organization of this institution, and the early struggles that the founders underwent to place it upon an enduring basis. The objects of the Academy, as set forth in its preliminary announcement, were:

1. The cultivation of the science of medicine.
2. The advancement of the character and honor of the profession.
3. The elevation of the standard of medical education.
4. The promotion of the public health.

These objects have been steadily kept in mind, and have made the Academy a power for good in these several directions.

On the adjournment of the Society for the Relief of the Widows and Orphans of Medical Men, after its fourth annual dinner, on the 18th day of November, 1846, at Peteler's, a then famous down-town restaurant, such well-known physicians as John Stearns, John W. Francis, Valentine Mott, Isaac Wood, Alexander H. Stevens, Thomas Cock, James R. Manley, Joseph M. Smith, John P. Batchelder, Henry D. Bulkley, Willard Parker, and others, remained to discuss the condition of the profession in this city and to consider what could be done to elevate it.

The result of the discussion was an invitation to the profession to hold a general meeting at the hall of the Lyceum of Natural History on the following 12th of December.

A small hall in Wooster street, over a coal yard, was secured as a place of meeting, and there the Academy continued to meet until June, 1850, when it moved to the smaller hall of the New York University. Later on its meetings were held in the lower lecture room of the College of Physicians and Surgeons.

As far back as the date of the incorporation of the Academy, June 23, 1859, subscriptions were solicited for a building fund, but it was not until 1875 that a building was purchased. On the 20th of May, 1875, it for the first time held a meeting in its own home, No. 12 West Thirty-first street.

A building having been acquired, renewed efforts were made to obtain a library. Many of the members contributed books from their private libraries, and some gave their entire collections, but the first real impetus was given when Dr. Abram Du Bois, although not a member, contributed several thousand dollars for the purpose of building a library hall at the rear of the building.

Library Hall, as the new part of the building was called, was finished and occupied in the fall of 1879, and thereafter rapid strides were made toward the great library which is now the proud possession of the Academy. It is now contained in the new building on West Forty-third street, consists of about 50,000 volumes, and, with the exception of that of the Surgeon General of the Army at Washington, a National affair, is the largest medical library in the United States.

Within a few years after the Academy had purchased a home in West Thirty-first street it outgrew its quarters, and strenuous efforts were made to acquire a more commodious and better adapted building. The present home in West Forty-third street was the result. The building, with the land upon which it stands, cost $284,426.59. It was built with subscriptions, large donations, and the proceeds of the sale of the Thirty-first street house. It is free from debt. The Academy's property, as shown by the Treasurer's report of December 15, 1896, is worth $336,740.82. There are a number of lecture, prize, library, and other funds that have been given for specific purposes.

The corner stone of the present building was laid in 1889, and in 1891 the edifice was ready for occupancy. It is a six-story structure, 75 feet front, and 100 feet deep. Its façade is of a Scotch redstone that was imported for the building. Its interior is especially adapted for the purposes of the Academy, and its arrangement is excellent. The library has accommodations for 200,000 volumes.

Of those who helped to found the Academy in 1847, the following Fellows are still alive and connected with it: Drs. Thomas M. Markoe, Edwards Hall, Lewis A. Sayre, and S. S. Purple, of this city, and John T. Metcalf and William Young.

The following is a list of the Presidents: Drs. John Stearns, John W. Francis, Valentine Mott, Isaac Wood, Alexander H. Stevens, Thomas Cock, Joseph M. Smith, Willard Parker, John P. Batchelder, John Watson, James Anderson, Alfred C. Post, Henry D. Bulkley, Edmund R. Peaslee, Austin Flint, Samuel S. Purple, Fordyce Barker, Abraham Jacobi, Alfred L. Loomis, D. B. St. J. Roosa, Joseph D. Bryant, and Edward G. Janeway.

The celebration proved a most enjoyable affair in every particular. The audience was composed of a large number of the most distinguished physicians of the city and State; of men prominent in the other professions; of well-known scientists and public men, and of representatives of the highest social circles of New York. The exercises consisted of an invocation by Bishop Potter, remarks by Dr. Joseph D. Bryant, the retiring President of the Academy, some reminiscences by Drs. S. S. Purple and Lewis A. Sayre, and an oration by Dr. Abraham Jacobi. This led up to the occasion of the evening, which was an address by President Cleveland.

Dr. Jacobi reviewed the work accomplished by the Academy, and the great progress of scientific medicine during the last fifty years. He referred to animal experimentation, and said that although many persons considered this branch of study cruel and unnecessary, there were many diseases which could be studied only by animal experimentation. The progress of medical science, he predicted, will be very great during the next fifty years. Its methods of investigation will not be changed, because they are now based on natural science, and medicine is now a part of natural science; but it will develop and progress, and become more and more a part of the education and culture of the people. Its ideal is the improvement of man, physically and intellectually.

PRESIDENT CLEVELAND'S ADDRESS.

"I have anticipated the share assigned to me on this occasion with considerable trepidation for various reasons. I have been chiefly disturbed because of my inability to discover sufficient ground for my right to join those who celebrate the semi-centennial of a medical association. I do not forget, however, that seven years ago I was accorded the privilege of participating in the exercises when the corner stone was laid of the building which is now the home of the organization which to-night celebrates its half century of useful and honorable existence.

"But this incident, which aroused an interest still undiminished in the Academy of Medicine, hardly entitles me to a share in the felicitations of those who have since borne the heat and burden of its work, while I have enjoyed the ease and happy surroundings of public station.

"Confessing, therefore, that I have no right to even standing room within the inner circle of the profession, I I have boldly and without the least authority determined to speak to you as a representative of the vast army of patients and laymen.

"At the outset I desire to remind you that you owe us much. Though largely in the majority and with plenty of members to spare, those who are well conducted among us do not vex you with hurtful competition. Instead of making life hard for you by an observance of the laws of health, we assist you by indulging in all sorts of irregularities. We are obedient and submissive to your commands—that is, when we are sick—and we sometimes pay your bills even after a recovery to health, which we are always certain would have resulted without your interference.

"We begin by conceding most heartily, and without the least reservation, the learning and skill of those now constituting the medical profession, and the wonderful advance that has been made through their untiring labors and investigations, in the alleviation of human suffering and the saving of human life.

"It may be that this seems to you an acknowledgment so much your due as to be hardly worth making. You should, however, value it, because it is sincerely made by those who were not born yesterday, but who hold in lasting and tender memory the ministrations of the village doctor of fifty years ago, and are now the living monuments of his faithful care. He, too, alleviated suffering and saved human life. We know that it was not given to him to see the bright lights that now mark the path of medicine and surgery, but you cannot convince us that he groped entirely in the dark.

"We remember without abhorrence his ever-ready lancet and the scars of his blood-letting found in every household. We endure with complacency the recollection of his awful medicine case, containing bottles, powders, and pills, which, whatever might be thought of them now, seemed then to be sufficient for all emergencies—to say nothing of the tooth-pulling tools and other shiver-breeding instruments sometimes exposed to view. If he was ignorant of many of the remedies and appliances now in use, he, in a large measure, supplied the deficiency by hard-headed judgment, well-observed experience, and careful nursing. Besides, it was in his favor that he did not have to bother his head with many of the newly invented and refined diseases that afflict mankind to-day. He had no alloted hours for his patients, but was always on duty, and we knew the sound of his gig as it rattled past in the night.

"Your ways are better than his; but we desire you to regard this admission as all the more valuable because it is carved out of our loyalty to our old village doctor, who brought us through the diseases of childhood without relapse, who saved from death our parents and our brothers and our sisters in many a hard combat with illness, and who, when vanquished and forced to surrender, was present in the last scene to close the eyes of his dying patient and sympathize with those who wept.

"I hasten to say that we do not for a moment suppose that advancement in the science of medicine and surgery has smothered the faithfulness and tender consideration which characterized the practitioner of former days. If we seek charitable service to the sick and suffering, a noble appreciation of obligation to humanity and self-abnegation in the discharge of professional duty, we must look for them among our physicians and surgeons of to-day.

"If we have now arrived at an understanding, you are, I hope, prepared for a suggestion quite in keeping with the extremely moderate and reasonable disposition that characterizes the patient and layman. You have invaded our benighted contentment and led us out into broad fields of scientific discovery. This has inspired us with a new-born spirit of wisdom and criticism which demands that new and larger fields be opened to our complacent gaze. You have penetrated the places where the germs of disease are hidden. We are quite certain that you should be required to destroy the origin of disease and ultimately to usher in the day when the only escape from the world will be through a passageway marked 'Old Age Exit.' If this has the appearance of exacting too much, or if business considerations present obstacles to its accomplishment, I think we ought, perhaps, to reduce our claims, or at least give our doctors time to find other employment.

In the meantime, those of us who are conservative must be allowed to hope that further investigation will continue to point the way to the prevention of disease. For this investigation we must still rely upon the efforts of those who have already done so much in that direction, encouraged and stimulated by such effective organizations as the Academy of Medicine. We are sure that this work, having arrested the attention of the world's brotherhood of medical science, will not be neglected; nor need we fear that America's contribution to splendid results will be deficient.

In some instances, however, investigation has performed its part, and only effective action in other quarters is necessary to supply needed remedies. In such cases, of course, you were absolved from all responsibility in your professional character by exhibiting dangers and warning against them. Thus certain diseases which you deem contagious yet remain imperfectly isolated. You have demonstrated the peril to health of unwholesome water and noxious surroundings, and yet much remains to be done by way of protecting our people against these dangers.

"You have established a code of ethics which condemns charlatanism in all its forms; and yet ignorant pretenders roam over the land offering to perform miracles, or are located in our towns and cities, preying upon the weakness of the sick and afflicted, while men and women are allowed to die without medical attendance, deluded with the hope that faith will save them in their last extremity. Within the limits of your professional power and influence you seek to restrain any approach to criminal malpractice; yet newspapers disgustingly, yet covertly, advertise the way to such crimes, and startle their readers with sensational tales of death and misery to which they are directly accessory.

"I need not suggest that such evils are allowed to exist by reason of the insufficiency of our laws or a laxity in their execution. I have intimated that for this condition you are not responsible in a professional sense, but are you sure that as citizens you are doing all in your power to remedy the situation?

"The village doctor was not only our physician, but he was a man of influence in all neighborhood affairs. In every matter that concerned the good of the community he was at the front. He was president of the village or represented his town in the county board of supervisors, and if he was ever late in visiting a patient it was because he lingered at the post-office to discuss the political situation. Thus he joined with the performance of professional duty a discharge of the obligations of citizenship.

"We cannot but think that the discoveries and improvements in the medical practice which we now enjoy are dearly bought if the members of the profession in their onward march have left behind them their sense of civic obligation and their interest in the general public welfare. We cannot accuse you of utter neglect of your duty to the country; and yet we cannot keep out of mind the suspicion that if your professional work in exposing evils were more thoroughly supplemented by labor in the field of citizenship, these evils would be more speedily corrected.

"If laws are needed to abolish abuses which your professional investigations have unearthed, your fraternity should not be strangers to the agencies which make the laws. If enactments already in force are neglected or badly executed, you should not forget that it is your privilege and duty to insist upon their vigorous and honest enforcement. Let me also remind you of the application to your case of the truth embodied in the homely injunction: 'If you want a job well done do it yourself.' If members of your profession were oftener found in our National and State legislative assemblies, ready to advocate the reformatory measures you have demonstrated to be necessary, and to defend your brotherhood against flippant and sneering charges of impracticability, the prospect of your bestowal upon your fellow-men of the ripened results of your professional labor would be brighter and nearer.

"While thus suggesting the need of your influence in legislative circles for the accomplishment of reforms related to your profession, you will, I hope, permit me in conclusion to enjoin upon you the duty of an active and general interest and participation in public affairs for the promotion of your country's good in all its phases. Our Government was founded in the faith and anticipation that those who loved it most and were best able to hold it steady would be at its helm. Without this it will surely go astray. Never did patient need your medical treatment more than the body politic now needs the watchful care of your patriotic and disinterested citizenship.

"No object of personal ambition and no activity of professional life should be permitted to withhold from our Government the tithe of devotion and service due from its thoughtful, intelligent, and educated citizens. The reward of a willing recognition of our obligation to watch and protect our free institutions and preserve them from weakness and decay, will surely come when a just government, supported by the patriotism of a loving people, shall bestow with equal hand upon us and all our countrymen the blessings of national peace, contentment, and happiness."

The large audience then repaired to the Academy of Medicine, where President Cleveland held an informal reception.

MEDICAL PROGRESS.

Large Vesical Calculus in a Boy Twelve Years Old.—VERHOOGEN (*La Policlinique*, 1896, No. 13, p. 655) has reported the case of a boy, twelve years old, who had suffered for six years with intense vesical pain, attended by an incessant desire to urinate. During the paroxysms of pain there was violent vesical and rectal tenesmus, and the small amount of urine voided had a strongly ammoniacal odor. The frequent rectal tenesmus and the repeated efforts at defecation had resulted in a considerable prolapse of the rectum. There had never been hematuria. The diagnosis of vesical calculus had long been made, but an attempt at removal by the perineal route had proved unsuccessful. By palpation through the rectum and the abdominal wall the stone appeared to be as large as a mandarin, and a process as large as a nut projected into the urethra. The size of the stone, as related to the capacity of the bladder, seemed to contraindicate lithotrity in favor of suprapubic lithotomy. The bladder being distended with about two ounces of sterilized water, and the patient placed in the Trendelenburg posture, a median longitudinal incision about two inches long was made in the abdomen above the pubes, and, after detachment of the peritoneal layer, the bladder was opened and the calculus exposed. The stone, whose peripheral layers consisted of phosphates, was very friable, and a good deal was first removed little by little. After some difficulty the calculus, which was adherent to the mucous membrane, was extracted, and the wound closed. The further progress of the case was uneventful. The interior of the stone contained three spherical nuclei of uric acid, each about the size of a cherry. Below it presented a pyriform prolongation nearly an inch long and an inch in diameter at the base. Its anterior surface was marked by a deep furrow corresponding to the inferior border of the pubic arch.

Pyemia in the Sequence of Acute Inflammation of the Middle Ear Following Diphtheria.—RIMINI (*Berliner Klinische Wochenschrift*, 1896, No. 27, p. 609) has reported the case of a child, 3½ years old, coming under observation on the sixth day of a mild attack of diphtheria. The symptoms disappeared in the course of three days, following an injection of the antitoxin, and convalescence appeared to have set in. Ten days after the injection, however, the temperature again rose, and a scarlatinoid eruption made its appearance, especially on the lower extremities. Two days later the temperature again suddenly increased, and on the following day there was complaint of pain in the right and subsequently also in the left ear, which was relieved by the occurrence of a copious discharge. In the further progress of the case several chills occurred, and the left knee-joint and the left forearm became swollen and painful. The pupils were dilated and sluggish in reaction, and the eyes deviated toward the left. Finally, coma set in and terminated in death. Upon *post-mortem* examination, the lower lobe of each lung presented evidences of bronchiolitis, but the larynx and trachea were free. The heart was small and firm. The liver was enlarged and in a state of fatty degeneration; the spleen also was enlarged. The mesenteric glands were tumid, and the kidneys swollen, anemic and fatty. The left knee-joint contained a considerable amount of turbid, purulent, grayish-brown exudate, and the connective tissue of the left forearm was the seat of serous infiltration. The brain was slightly edematous, but free from other alteration. Careful examination of the temporal bones disclosed the presence of dark, fluid blood in the transverse, superior petrosal and inferior petrosal sinuses. The external auditory canal, the middle ear and the antrum on each side were filled with thick, cheesy pus. The left tympanic membrane was entirely destroyed; the right presented a small perforation. Microscopic examination of the pus showed the presence of a large number of cocci only.

Splenic Leukemia in a Child Eight Years Old.—CHARON and GRATIA (*Bull. des Séances de la Soc. Roy. des Sc. Méd. et Nat. de Bruxelles*, 1896, No. 7, p. 63) have reported the case of a girl, eight years old, who came under observation with an abdominal tumor of six years' standing, mainly with a view to operation. Examination, however, disclosed the enlargement to be due to an hypertrophied spleen; and the liver also was increased in size. The subcutaneous veins of the abdominal wall were dilated, but there was no evidnece of any noteworthy ascitic effusion. A study of the blood disclosed the proportion of colorless to red corpuscles to be as one to five. The temperature was a little above the normal. The administration of an arsenical water was begun, but had to be abandoned on account of the resulting diarrhea. At a second examination of the blood the number of red corpuscles per millimeter was found to be 880,000, the number of colorless corpuscles 305,000 and the hemoglobin-estimation 39 per cent. Many of the red corpuscles were of increased size, a small number were nucleated, and poikilocytosis was marked. The colorless corpuscles consisted of small lymphocytes, multinuclear leukocytes or leukocytes with polymorphous nuclei, and large mononuclear leukocytes. Death took place with symptoms of dyspnea. Upon *post-mortem* examination the lower lobes of both lungs were found atelectatic. The spleen weighed 38½ ounces and presented evidences of white infarction; its capsule was thickened in places, its parenchyma pale and dense. Microscopic examination disclosed the existence of a uniform hyperplasia of the reticular structure. The liver weighed 63¾ ounces; its surface was smooth, its parenchyma pale and firm.

The parenchyma was remarkable for the enormous development of its vascular system, particularly the intralobular veins, which were filled with leukocytes. The hepatic cells were distorted and compressed. The lymphatic glands presented little abnormality, those of the mesentery containing large cells, with nuclei, resembling giant-cells.

Extra-Genital Infection with Gonorrhea.—AQUILA (*Monatshefte für Praktische Dermatologie*, 1896, B. xxiii, No. 1, p. 16) describes an unusual method of infection with gonorrhea, of which he was himself the victim, while acting as assistant in a large service for the treatment of cutaneous and venereal diseases. It was the custom to treat the cases of urethritis with injections of a three per cent. solution of silver nitrate, and to study bacteriologically the urethral secretions every third or fourth day, care always being taken to wash the hands afterward with soap and then immerse them in an antiseptic solution. The development of an eczema of the hands led to a temporary relaxation of these precautions, and in a short time a sense of burning was noticed on the preputial surface of the glans penis and at the extremity of the urethra. The irritation gradually increased, and in a little while a drop of pus made its appearance, examination of which disclosed the presence of gonococci. A typical attack of gonorrhea now developed and pursued the ordinary course. The infection is believed to have been incurred either through bathing in a tub used by infected patients, or directly from the undisinfected fingers used in making cover-slip preparations of urethral secretions.

THERAPEUTIC NOTES.

Injections of Carbolic Acid into the Parenchyma of the Tonsils. Acting upon the theory that recurrent tonsillitis is set up in most cases by retained germs, which, under circumstances unfavorable for the patient, rapidly develop and cause new inflammation, KRAMER (*Centralbl. für Chir.*, No. 47, 1896) has for some years been using parenchymatous injections of carbolic acid in order to destroy the retained bacteria. The patients so treated were those who, for a considerable period of time, had suffered from attacks of acute inflammation of the tonsils, occurring at intervals varying from two months to one year. There was no especial reason in the previous treatment of these patients why the trouble should recur. The cases in which abscesses had formed were treated by sufficient drainage and frequent gargling and irrigation with antiseptic fluids. Besides, in many cases, portions of the tonsils had been removed or the organs had been scarified with the cautery, carious back teeth had been extracted, etc.

The treatment was not begun until some weeks after the recurrent attack had subsided. It consisted in the injection of carbolic acid 1:40 every two or three days until four to six injections had been made. The sterilized needle of an ordinary syringe was introduced to a depth of one centimeter into the anterior pillar of the fauces, after this area had been cocainized, and if no blood escaped the carbolic solution was injected a drop at a time, the point of the needle being pushed in several directions, until ½ c.cm. (♏ xv) had been injected. At the subsequent injections another site was selected. The local reaction was slight. There was some discomfort in swallowing, the following day, but no general symptoms were excited.

A single case would not prove anything, but Kramer reports fifteen patients who have already passed two and a half years without recurrence of their previous trouble, and in numerous other instances two years or less have gone by without relapse, so that the author feels confident that the freedom from recurrence is to be set down to the influence of the injections.

Advantages and Disadvantages of Eucain in the Surgical Treatment of the Eye.—WUSTEFELD (*Münch. Med. Woch.* December 22, 1896,) used a 5 per cent. watery solution of eucain in twenty operations upon the eye. In every instance the patients complained of the sharp burning, which lasted a considerable time and produced dilatation of the vessels of the sclera. The anesthesia, however, was satisfactory, closely resembling in its beginning and its continuance that of cocain. In almost every case there was a difference in the pupils and paralysis of accommodation. The former was evident in fifteen minutes and the latter from ten to fifteen minutes later. Microscopic examinations of the eyes of rabbits showed in every case unmistakable evidence of the effects of the eucain. The epithelial cells were swollen, and in some places the upper layer was séparated from the under layer. After these findings it is scarcely probable that eucain will displace cocain in eye surgery.

Creosote in the Treatment of Children.—HOCK (*Wien. Med. Blätter*, December 3, 1896,) has had brilliant results from the use of creosote in treatment of children, not only in phthisis but in the sequelæ of whooping cough and the catarrh which so often follows measles. These two conditions, as is well known, furnish a favorable opportunity for tuberculous infection. The usual treatment with expectorants is too often without result. Most diseases of childhood are accompanied by disturbances of digestion, and these are the symptoms which are first relieved by the use of creosote. The appetite improves, the abdominal pain disappears, and weight increases. Later the pulmonary condition improves. It goes without saying that the creosote must be given in such a manner as not to upset the stomach, and large doses in a concentrated form are therefore to be avoided, the drug being given in small doses with meals. Pills, though cheap, are objectionable, especially for very young children. Hock tried in a number of instances to administer fluid creosote with tincture of gentian, but in almost every case the stomach refused the medicine after a few days. He was most successful with a 1 to 2 per cent. solution of creosote in codliver oil, to which one-twentieth of 1 per cent. of sugar was added. The dose of this mixture is from ½ a dram to ½ an ounce, three times daily, according to the age of the patient.

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THE COMPULSORY NOTIFICATION ACT OF THE NEW YORK BOARD OF HEALTH.

JUST at present the medical profession of New York City is in a condition of hyperesthesia regarding its rights and prerogatives. It is quite possible that this may account for the somewhat irritable opposition that has manifested itself to the recent announcement of the Board of Health regarding the compulsory notification and isolation of cases of pulmonary tuberculosis. In these circumstances the disinterested judicial opinion of the *Boston Medical and Surgical Journal* may prove a gentle sedative to our overwrought indignation.

"We cannot but think that these provisions are in the line of future progress in the application of medical and sanitary science. Laws are only useful in so far as they can be enforced, and enforced with less loss and injury than is entailed by their absence. The useful and possible enforcement of the regulations under discussion will depend very greatly upon the tact, discretion, and good judgment of those entrusted with carrying them out. The working and the results of these regulations in New York will be watched everywhere with much interest.

"The question of diagnosis, of isolation, of treatment in the large sense, is decided to-day in the laboratory rather than at the bedside. There is a danger of being too ready with these new-found weapons, of expecting too much from them; but there is also the danger of rejecting them because they are new. The general practitioner may be a very desirable check upon the enthusiastic bacteriologist, but the practitioner, the hospital clinician, and the bacteriologist, should all coöperate cordially and heartily together, and carry the general public along with them by example as well as by precept. There is work for all, and distinction to be gained from good work by all, but there should be no room for jealousy and no time for hindrance."

As confirmative of the wisdom of the Board of Health in taking the position it has, the facts presented by Dr. Hance in a recent paper before the Academy of Medicine are of interest. The paper was entitled "A Further Study of Tubercular Dust," and was based upon experiments made by the reader at the request of Dr. Biggs. As a result of one of these experiments, three out of four guinea-pigs that had been inoculated with dust taken from a tenement-room in which a phthisical woman had lived and died, developed tuberculosis and died with well-marked lesions of the disease; while four guinea-pigs inoculated with dust taken from a room where a patient with tuberculosis lived, but who observed the regulations of the Board of Health, at the end of fifty-seven days, when the animals were killed, were apparently perfectly healthy.

THE ABUSE OF CHARITY.

WHILE the medical profession in all the larger cities of America is struggling with the great problem of dispensary and hospital abuses, similar problems are being encountered by our professional brethren across the water. We had occasion recently in our news column to refer to the fact that certain club or lodge doctors in the towns of Beckenham and Penge had been induced to combine and take a positive stand against a reduction in prices. In other words, the doctors threatened to strike in order to maintain the rate of fees. Unfortunately, the combine was defeated by the decision of the clubs to pool their interests and import a medical staff. Now it is reported that a wealthy resident of Beckenham has offered to build and furnish a dispensary at his own expense for the benefit of the club members.

A pitiful tale comes from the town of Sheerness in England, of a practitioner who was sued for non-payment of debt. He swore that he had been in practice in that town for five years; that he had a wife and one child; that his chief source of income was a club, the members of which he attended professionally at the munificent rate of one-halfpenny each, per week, from which he realized £1 17s. ($8.99), out of which he had to provide all drugs. His private practice yielded him an income of five shillings ($1.20) per week. Commenting upon this, the *Medical Press and Circular* says: "Can anyone propose that this miserable brother shall be prevented from earning the halfpenny a week upon which he and his family starve? Or that the people who expect to get capable advice and medicine for that sum shall be forcibly dispossessed of their hallucination?"

In Paris the same problem presents itself in a little different phase. Here we have an abuse of charity which has grown out of the "medical night service." This service is provided for by the city of Paris out of the public treasury, and the hours of duty are from 10 in the evening until 6 in the morning. The "*Medecins de nuit*," as they are called, volunteer their services. Any medical man who desires to join the corps is invited to inscribe his name in a book kept at the police station of his district. If any person falls suddenly ill in the night, a message is conveyed to the police and the police sergeant looks up the name of the medical man on the roll living nearest to the residence of the patient, and accompanies the practitioner to the house. The necessary attention having been given to the sick person, the sergeant pays the doctor a fee of 10 francs ($2.00). This sum is afterward charged to the prefecture of police, which authority takes steps to reimburse itself when the patient is in a position to refund the money, but when the patient has no means, the fee has to come out of the city treasury. The Municipal Council has stated that, while the medical night service is highly appreciated by the Parisian population, it is nevertheless a fact that, unfortunately for the city budget, the great majority of the persons who seek the aid of the service maintain that they should be attended gratuitously. This state of affairs has naturally led to the reorganization of the service upon a different basis. Under the new rules, 135 practitioners will be employed at an annual salary of £24 (about $120). This reduction of fees will place the staff in the position of receiving not more than 3 francs (60 cents) a visit. At this reduction the doctors are naturally indignant, and insist that if the new rules are permanently enforced they will be obliged to sever their connection with the department.

CONGENITAL SPASTIC RIGIDITY—LITTLE'S DISEASE.

IN 1862, the English surgeon and obstetrician, Little, communicated to the London Obstetrical Society the result of observations which he had made on a class of children born before full term, or at term, and often with the use of instruments. The defects which these children presented were principally somatic and to a slight degree psychic. The former consisted of diplegia of a spasmodic type, most strikingly manifest in the lower extremities, where it constituted a condition of paraplegic contracture, less evident in the upper extremities, although frequently sufficiently well-marked there to constitute a distinct impairment, and, least marked of all, in the cephalic extremity. The psychical defect consisted of lack of proper and timely development of the mental processes, which was very rarely of such a degree as to constitute a mild form of idiocy. This description has been perpetuated by almost every writer on the subject since that time. The symptom complex, although dating from birth, is not usually recognized until a number of months later—possibly at the time when a child endeavors to creep and to walk. Attention is then drawn to it by the inability to make either crawling or walking movements. In the beginning, the spastic, rigid condition may be quite well marked in the upper extremities; possibly, also in the cephalic extremity; but as the infant grows older, this condition tends to decrease, until, when it arrives at the age of beginning childhood, manifestation of the spasticity in the upper extremities is comparatively slight, and perhaps attracts no notice. The evolution of the disease-process in the lower extremities is very much more delayed, and oftentimes remains until the end of the patient's life, constituting a very distinct and striking deformity, of which the principal symptoms are rigidity, without particular loss of power, cross-legged progression when the patient essays to walk, increased myotatic irritability and loss of purposive movements. The condition is often known as congenital spastic rigidity, but very frequently, and particularly during the last few years, Little's name has been eponymically associated with it.

The pathogenesis and morbid anatomoy of Little's disease are still very obscure. Lately, van Gehuchten has turned his attention to the subject, and the result is that more illumination has been given it than at any time since its original recognition. His contributions have appeared in recent numbers of the *Journal de Neurologie*.

In discussing the clinical and etiological side of the disease, van Gehuchten points out that those authors who teach the occurrence of this condition in children born at full term with the aid of instruments are in error, at least in part. He believes that obstetricians are nearly in accord that the symptom complex of congenital spastic rigidity is commonest in children born prematurely; and it matters very little whether the birth be an easy or a difficult one. At this time of life the pyramidal tracts are almost wholly non-medullated and naturally, therefore, devoid of the ability to functionate. The first tracts to become medullated are those constituting the indirect motor pathway—the pathway through the pons-cerebellum—while the direct pathway—the cortico-spinal fibers—are very much delayed in acquisition of myelin sheaths, and perhaps may never develop them at all. In its downward growth during the latter years of infancy, the tract of the cortico-spinal fibers reaches first the upper and then the lower levels of the cord, those fibers destined for the lumbar and sacral portions requiring the longest time to reach their destination. In accordance with this, the rigidity and contracture disappear first in the face and head, then in the upper extremities, and remain longest and perhaps do not disappear at all in the lower extremities.

In short, therefore, this author contends that absence of the myelin sheaths of cortico-spinal fibers constituting the pyramidal tract is attended by the same clinical phenomena as degeneration of these fibers. In both conditions there is an absence of inhibitory action of these fibers upon the motor ganglion cells of the anterior horns, consequently the spasticity. If his claims are corroborated by other investigators, a very important step will have been taken for a satisfactory explanation of the pathogenesis of this condition, and possibly also for the prevention of its occurrence. If it be a developmental defect dependent upon premature birth, the prevention of the condition will simmer down to an obstetrical problem, to wit: How can delivery be delayed until the period of complete fruition?

These recent writings of van Gehuchten, which commend themselves to one because of the closeness of reasoning contained in them, especially reasoning from analogy on well-founded anatomical facts, will at least serve the purpose of calling the attention of the general practitioner, as well as of the neurologist, to the necessity of more accurate and trustworthy observation concerning the genesis and time of occurrence of the disease. At the same time they enlarge our perspective of the condition by furnishing us a different point of view from which to study it.

Joseph Collins, M.D.

ECHOES AND NEWS.

The New York Board of Health Censured.—Last week a coroner's jury brought in a verdict in which it censured the Board of Health for granting licenses to midwives without examinations. The case was that of the death of a woman after treatment by a midwife.

Officers of the Philadelphia Neurological Society.—At the January meeting of this Society the following officers were elected: President, Charles W. Burr; Vice-presidents, J. Hendrie Lloyd and J. Madison Taylor; Secretary, W. S. Spiller; Treasurer, Guy Hinsdale.

District Branch of the N. Y. State Medical Association.—The thirteenth annual meeting of the Fifth District Branch will be held in Brooklyn on Tuesday, May 25, 1897. All Fellows desiring to read papers will please notify E. H. Squibb, secretary, P. O. Box 760, Brooklyn.

Lord Lister to Visit America.—It is a great pleasure to be able to announce that Lord Lister is seriously considering a visit to New York during the approaching summer. No guest would be more honored and welcomed by the medical profession of America.

Deaths from Accidental Asphyxiation.—In Boston during the year 1896 there were twenty-four deaths from accidental gas-poisoning, a number greatly in excess of previous years and directly attributable to the water-gas now employed. This contains about forty per cent. carbonic oxid and a small proportion of naphtha gas. The former is odorless and consequently insidiously fatal. Professor Wood of Harvard Medical School suggests a larger admixture of petroleum gas, which has a most penetrating odor.

Control of Milk Supply in Minneapolis, Minn.—Minneapolis is one of the small number of cities in which the health authorities have undertaken to prevent the sale of milk from consumptive cows to the people under their jurisdiction, by requiring all dairy farmers who ship milk to the city to prove that their herds have been purified by means of the tuberculin test. One farmer rebelled against this requirement, and appealed to the courts, upon the ground that the city's Board of Health had no right to enforce such a regulation with respect to dairy herds kept outside of the city limits.

New York Polyclinic Medical School and Hospital.—The trustees of the Polyclinic have decided to erect a new building on the site of the old one. Funds have already been secured for this purpose and work is to be begun immediately. The building will be adapted in every possible way to the requirements of the institution, and the two upper floors will be devoted to hospital facilities. There is every reason to believe that in its new home the Polyclinic will enter upon a career even more successful than that which has characterized its existence to the present time.

The Use of Mice in Cleaning Bones.— The economic value of agencies formerly held in supreme contempt is being appreciated and utilized. Dr. Samuel H. Friend of Milwaukee, Wis., submits the following suggestion: After stripping the soft tissues as much as possible with a scalpel, place the bones either in a wooden box lined with tin, putting with them one or two dozen mice, or in a room overrun with the rodents. In a surprisingly short time the bones will be freed from all soft tissues. This method is especially adapted when it is desired to retain the spinal column and ribs intact. Tin caps over all cartilaginous ends will protect them.

Aryan Medical Etiquette and Superstitions.—"A Short History of Aryan Medical Science" has been written by a Hindu trained in Western science. From this it appears that the secret of long life is to look every morning at the reflection of your face in ghee. If you have no ghee, a looking-glass will do. "Looking eastward at meal-time" also conduces to longevity. A doctor who asks for his fee is unworthy of respect, but, on the other hand, if you do not pay him his due, your "stock of merits" will be transferred to him at your death, and his next incarnation will be just so much higher up the scale.

Funds for the New York Saturday and Sunday Association.—The association aims at interesting everybody in hospital work. The total of last year's collections was $22,190.76 from churches, and $58,919.45 from other sources. Bed patients numbering 30,700 were cared for. Of these, 23,271 were free. Medical aid was given to 250,000 free dispensary patients. The Executive Committee, in a statement, set forth that the hospital expenses of the past year were $1,323,238.15, with an income of $292,581.83 from funds invested; from paying patients, $299,996.79, and from the city, $66,047.91. The Association now embraces thirty-eight hospitals, and the collection is divided among them on the basis of free work performed by them during the year preceding on behalf of the poor.

New Medical Superintendent of the Manhattan State Hospital.—The State Civil Service Commission announces the appointment from the eligible list of Dr. Percy Bryant of Buffalo as Medical Superintendent of the Manhattan State Hospital, at a salary of $2,500 per year. Dr. Bryant is first assistant physician at the Buffalo State Hospital. He was born at Cedar Falls, Iowa, April 19, 1863, and at an early age began the study of medicine in Chicago. Later he was an interne in the Cooke County Hospital. From Chicago he went to New York, where he entered the College of Physicians and Surgeons, from which he was graduated in 1887. Two years later he went to Buffalo and entered the State Hospital as an interne. Afterward he was appointed third assistant, and finally first assistant. earning all of his promotions by merit.

A Flannel-shirt Club.—From this title, one would naturally fancy that a nautical club was meant, with members whose minds were on outings bent, but such is not the case. The matter is much more serious and worthy. It has been constantly observed that a repeated cause of suffering and often of fatal relapses among convalescent patients of the poorer class was due to the insufficient clothing with which they were discharged from the hospitals. In London a club has been formed whose members bind themselves to furnish enough flannel for a shirt, together with a small contribution in money, at least once a year. From this a shirt is made in the wards of the hospitals and each needy patient is provided with one when he receives his discharge. A more simple or practical charity has not been established.

Meeting of the American Medical Association.—The committee of arrangements for the fiftieth meeting of the American Medical Association, to be held in Philadelphia, June 1, 2, 3, and 4, 1897, desire to announce that in addition to the regular order of exercises during the meeting of the Association there will be for a week preceding and succeeding the Association meeting. special courses and clinics given in the various large teaching institutions of Philadelphia, without cost to visiting physicians. This course has been organized in response to a generally expressed wish that opportunities might be given to visiting physicians of taking clinical courses, for it is believed that many physicians from distant points would be glad to spend a week or two over and above the time occupied by the meeting in this manner. A schedule and roster describing the course in detail will be published shortly before the meeting. Further information may be obtained from Dr. Edward Martin, 415 S. Fifteenth street, Philadelphia, the Chairman of the Committee on Hospital Courses.

Officers of the New York State Board of Medical Examiners.—The following have been re-elected as officers of the State Board of Medical Examiners for 1897: President, William C. Wey, M.D., of Elmira; Secretary, M. J. Lewi, M.D., of New York City; Question Committee, George Ryerson Fowler, M.D., of Brooklyn, and M. J. Lewi, M.D., of New York. Since the existence of the present law and its active enforcement, extending over a period of five years, 2832 doctors of medicine have applied for admission to practice in this State. Under the old law all these would have been admitted unquestioned. The State Boards of Medical Examiners rejected 937 of those who applied, or 29 per cent. The State Medical Society has nominated the following for appointment to the three vacancies existing on the State Board of Medical Examiners: William W. Potter, M.D., Buffalo; William S. Ely, M.D., Rochester; A. Walter Suiter, M.D., Herkimer; Daniel Lewis, M.D., New York, and Ernst Stoddard, M.D., Rochester.

Control of Consumption.—General Emmons Clark, Secretary to the New York Health Department, in relation to the Health Board's plan to assume control of consumption cases, says: "The various critics of the Health Department and its plan to control consumption have, in my opinion, taken a false view of the proposition made by the Board. They seem to draw the conclusion that it was our intention to surround each case with a strict set of rules and to isolate patients and remove them from their homes. Nothing is further from our intention than this. The intention is to keep a close record of all cases, and insist that proper precautions shall be taken to give the patient proper attention and see that measures necessary to prevent infection from the patient are taken. We have no intention of interfering with practitioners in charge of cases, but in cases where persons are destitute and unable to receive proper attention we will see that they are cared for. In cases of death among this class of patients, measures will be taken to disinfect clothing and apartments, so that there will be no danger of a recurrence of the disease from any cause attributable to the last patient."

CORRESPONDENCE.

ACETANILID AS A SURGICAL DRESSING.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In your issue of August 15, 1896, an article by Dr. J. J. Walsh, on "The Inhibitory Action of Acetanilid on Bacterial Growth," strongly attracted my attention: and I was equally interested in Dr. Foote's study of Formalin-gelatin, published November 14. His paragraph on acetanilid, in which he speaks of its comfortable and satisfactory action for two or three days, and of its ultimate failure to check or prevent suppuration, fully agrees with my experience. From this experience I was led to seek some addition to acetanilid which would fully inhibit suppuration. I first tried boric acid, acetanilid, and carbolic acid; but the powders were not sufficiently absorptive, and the compound was too moist and pasty. After many trials I used this: Powdered acetanilid, 48 per cent.; powdered boric acid, 15 per cent.; powdered starch, finely sifted, 35 per cent.; carbolic acid, liquid, 2 per cent. This compound, though slightly moist and adhesive, has all the effect of a dry dressing; in fact, upon a wound it is or becomes perfectly dry. Its absolute comfort leaves nothing to be desired; under its use there is not from first to last the least discomfort except a momentary smarting on the first application, too trivial to be worth mentioning. The most exquisitely sensitive sore can in a few days be handled with impunity. There is no odor, even of the carbolic acid. It absolutely inhibits suppuration where it can reach the wound surface, and it checks and quickly abolishes suppuration if that be already present. The powder should be changed twice a day as long as there is a discharge to moisten it; soon, however, the wound becomes absolutely dry, and the powder may be left for days undisturbed, and will still be found as dry as when applied, unless there is a pocket from which pus may come. Cicatrization is rapid and satisfactory.

Obviously, this powder would be unsuitable for introduction into a cavity, unless it was intended that the cavity should granulate from the bottom; and in that case the possibility of easy removal of the masses formed by the pus soaking into the powder before the wound becomes dry, should be considered. On an accessible granulating surface, and upon a sutured wound, it is the nearest to a perfect dressing I have yet seen.

W. A. FALLAS, M.D.

HORTON, MICH.,
December 25, 1896.

A REQUEST TO THE MEDICAL PROFESSION.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: During the last ten years I have appealed to physicians from time to time to send me the human embryos which fell into their hands, and have in this way procured some very valuable specimens. These specimens have been cut into sections, and are now being modeled and studied very carefully. Yet a number of important stages are still wanting, and I therefore ask through your columns that physicians send me any material which they may obtain.

The best method to preserve human ova is to place the unopened ovum, without handling, and as soon as possible, in strong alcohol. By this method the embryo within is well hardened for future microscopic study.

It is very injurious to wrap these delicate specimens in cotton before sending them by mail or express. A perfect method is to place the preserved specimen in a bottle filled completely with alcohol, thus imitating the condition of a *fetus in utero*. If there be no air or cotton in the bottle, it is almost impossible to injure the embryo by shaking it.

Very sincerely yours,
FRANKLIN P. MALL,
Professor of Anatomy.

JOHNS HOPKINS UNIVERSITY,
Baltimore, Md., January 23, 1897.

OUR PARIS LETTER.

[From our Special Correspondent.]

AN INSTANCE OF GROSS MISCARRIAGE OF JUSTICE DUE TO MEDICO-LEGAL SHORTCOMINGS—SECOND ANNUAL SESSION OF THE SOCIETY FOR THE ENCOURAGEMENT OF POPULATION IN FRANCE—THE DIAGNOSTIC VALUE OF THE TYPHOID SERUM REACTION IN TYPHOID FEVER.

PARIS, January 10, 1897.

DURING the past two months, France has had a very startling lesson as to the value of expert testimony. Now that all the facts are clearly before the public and the mistaken and much condemned medico-legal experts have had an opportunity to explain the terrible error that was made, we can realize how important for all countries is the lesson that it teaches.

The facts are about as follows: Some five years ago a woman of Rouen was condemned to penal servitude with hard labor for life for the suspected murder of her husband. Her character was bad, and she was addicted to drink. On the occasion of a previous illness of her husband she had been known to rejoice, and when he grew better she had been heard to say that he would be dead within the year, anyhow. There had been a series of quarrels between husband and wife shortly before his death.

The husband and a relative of the woman had become very sick after eating some food prepared by her. The sickness thus induced had proved fatal; in other words, there was a complete chain of circumstantial evidence implicating the wife in the crime, if crime there was. Legal measures were at once taken to bring the supposed criminal to justice. The stomach and intestines, the liver, kidneys, lungs, and brain, and a vial of blood, were sent under seal to medico-legal experts for examination. The only thing found by the experts was a series of deep erosions of the intestinal mucous membrane. These seemed to point to the action of an intensely irritant poison. No traces of the poison were found, but the experts declared that death had not resulted from natural causes but from the ingestion of some irritant poison. As examination of the various organs had proved negative in the search for traces of poison the blood was not examined chemically, but its appearance was noted as being dark in color, but not abnormal.

On the strength of this expert opinion the condemnation took place. In the statement of the case to the experts no mention was made of the fact that the house in which husband and wife lived, and in which he died, adjoined a limekiln; that, in fact, the wall between dwelling and kiln was of scarcely more than ordinary thickness. Time went on and other tenants of the same dwelling became sick and had to move. Finally, about a year ago, another death under suspicious circumstance took place, and public opinion, then thoroughly aroused, demanded an exhaustive investigation. Professor Brouardel and Drs. Ogier and Descoust of Paris, all well known as medico-legal experts, and the first a well known authority on legal medicine, were given charge of the investigation. They found that the last death was due to carbonic oxid poisoning, the gas being formed in large quantities during the incomplete process of combustion in the limekiln and diffused through the party wall into the adjoining living apartments. Asked to review the findings in the former supposed murder case, they declared that too to be undoubtedly a case of carbonic oxid poisoning, though with some anomalous features. For over six years the poor victim of incomplete investigation, legal misunderstanding, and unfortunate combinations of circumstances, had been suffering the severest penalty possible in France for a crime she had not committed. Her condemnation was revoked, her innocence formally declared, and she was awarded large compensatory damages, which might have benefited only her heirs but for the prejudice in France against capital punishment in the case of women.

The newspapers generally have very severely condemned the medico-legal experts in the case, but a dispassionate review of the circumstances shows the legal lights engaged in the case to be at least as blameworthy.

Before the explanatory statements of the experts, which appeared only a few days ago, it might have been thought that the error was merely a personal one due to overhasty judgment and the drawing of conclusions not justified by the facts in the case, but now it seems clear that the fault lies in the fact that owing to merely business relations, as it were, existing between court and experts, neither party was sufficiently informed as to important details, and the error resulted for which both must share the responsibility.

In sending the specimens to the experts the court said nothing of the presence of the limekiln near the scene of the supposed crime, and the attorney for the defense made no use of its possibilities, either in his general defense or his special plea. They do these things very differently with us, even when the clients are as poor as the defendant was in this case. The experts only gave an opinion that was justified by the *post-mortem* appearances as they had been interpreted by the authorities in legal medicine up to that time. Severe intestinal lesions of an erosive character had never been described as occurring in carbonic oxid poisoning. The dark color of the blood that comes with the presence of carbonic oxid instead of the rose-red tint, and its normal coagulation, instead of remaining fluid, removed the only clue that might have aroused suspicion of the true nature of the poison that had caused death.

The whole case is extremely interesting and points out the necessity, on the one hand, of giving detailed information to medico-legal experts of all the circumstances connected with the case, and, on the other hand, for the expert to frankly state the limitations of certainty in his conclusions where many of the findings are negative, even though suspicious lesions may exist.

Just before the close of the year the second annual session of the Society for the Encouragement of Population in France attracted a good deal of attention. Recent statistics show that as regards increase in population France is scarcely holding her own. In 1895 the excess of births over deaths, in the whole country, was scarcely more than 125,000. Most Frenchmen, I think, would not bother their heads about this were it not that in Germany during the same year the excess of births over deaths was more than 1,000,000. Public attention has been called to this very forcibly and now determined efforts are being made to have motives of patriotism if possible take the place of the other motives that are usually so effective, but which have lost their efficacy in France, for the propagation of the race.

Public interest took the shape of discussions in the newspapers of the causes that prevent the increase of population, and in these the doctors came in for their share of blame. Increase in the number of abortions, and the spread of medical knowledge in the shape of prophylaxis, were set down as potent factors in the impending depopulation, and these were both attributed to medical influence by the rather hysterical French press. As to the first, the evil probably exists in no greater proportion here than elsewhere; as to the second, the French disinclination to have large families has led to the filtration of Neo-Malthusian doctrines from the higher classes to the lower, so that now a family of more than three in the city is a marvel. "France," as remarked a recent writer whose work attracted a good deal of attention, "is a country of only sons who do not marry."

The wealthy do not care to have large families because *Madame* cannot afford the time and *Monsieur* cannot afford the money to dower his daughters, and neither wish to be compelled to divide the patrimony among more than two or three. The poor, who, as it is, find it hard enough to get along in the overcrowded cities, have learned the lesson from their betters, or at least their superiors in caste and intelligence. Only a few of the middle class, the despised *bourgeois*, have more than four in the family and *Voila! la France que commence a depopuler!* It is wrong to attribute anything of this state of affairs to the medical profession, or to ideas that originate with its members. The fault lies, not with any particular class or profession, but in that profound disregard for details in practical social morality which has so deeply invaded all classes in France.

And now come the remedies for the social disease. Not very promising ones, verily. Sumptuary laws for the remittance of taxes on families with more than a certain number of children have been advocated. Then a proposal has been made, which is very popular, to the effect that the state should assume the expense of the education of all children more than three in number in a family. A series of suggestions, drawn from the famous laws of Augustus, when the same state of affairs existed in imperial Rome, have also been brought forward. Everyone knows how ineffective were the Augustinian decrees, and one need not be a prophet or the son of a prophet to tell what the result will be here. The evil lies deeper in the body politic than these superficial remedies can reach. Meanwhile, for other countries there is the practical lesson of the result of certain tendencies in our modern civilization, seemingly of slight importance as yet, but surely impending, and which the medical profession, owing to its intimate relations with family life and affairs, would seem to have a special duty to avert as far as is possible.

A good deal of medical literature just now is taken up with the discussion of the diagnostic value of the typhoid serum reaction in typhoid fever. Most writers, especially Americans, have agreed in attributing the cause of the reaction to antitoxins present in the blood. It is the presence of products in the blood elaborated by nature in her reactive effort to protect the organism against the bacillus that gives rise to the clumping of the bacilli in the presence of the serum, and this clumping is really a degenerative process. While such was the opinion over here until recently, it is gradually being modified. The reaction has been noted in cases of relapse of typhoid just when the first fever symptoms of the relapse declared themselves. It occurs in all cases at such an early stage that even Widal himself has now come around to the opinion that it is rather a phenomenon of infection than one of protective reaction. This may be even more important than if it were merely a commencing bactericidal action, for while bactericidal phenomena have been studied often enough already, opportunities for the study of infective phenomena have been lacking because of the difficulty of knowing where to look for them.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

SIGNIFICANCE OF THE KLEBS-LOEFFLER BACILLUS IN CHRONIC NASAL DISCHARGES—THE SCHOTT TREATMENT OF HEART DISEASE—UNIQUE SPECIMEN FROM THE STOMACH OF AN IDIOT—OBLITERATED INNOMINATE ANEURISM—RETROPERITONEAL SARCOMA—FLECHSIG'S DISCOVERIES IN CEREBRAL LOCALIZATION—ANTIVIVISECTION SOCIETY "ÉN GARDE."

February 1, 1897.

At a stated meeting of the Philadelphia County Medical Society, held January 27th, Dr. Eugene L. Vansant made a report of the results of a bacteriologic investigation of the nasal mucus of 100 cases of chronic nasal discharge. In twenty-six per cent. of the cases examined, the Klebs-Löffler bacillus diphtheriæ was present. Streptococci and various pus organisms, as well as numerous non-pathogenic bacteria, were found in a large majority of instances. Conjecture was made as to the possibility of a causal relation existing between the presence of the Klebs-Löffler bacillus and the chronic nasal discharge with its attendant impairment of vitality. Discussion of the paper brought out the facts (1) that at present animal inoculation is not required to establish the identity of the Klebs-Löffler bacillus, its morphology and behavior towards media, etc., being sufficient for that purpose; (2) whether the clinical picture be of true diphtheria or of chronic nasal catarrh depends on the *virulence* of the infecting bacillus diphtheriæ in each separate case, due credit being given in each instance to the individual's powers of resistance, rather than to the fact that the infection is due in the first place to the true bacillus of diphtheria, and in the other to the pseudo bacillus.

Dr. Andrew J. Downes exhibited a portable cylinder of acetylene gas for surgical illumination, and a self-retaining double-bladed wire vaginal speculum. Dr. S. Solis-Cohen presented the Schott method of gymnastics in the treatment of heart disease. By a series of gently resisted and restricted gymnastic movements of the trunk and limbs, aided by a course of systematic bathing, the peripheral vessels are stimulated and the heart's action reinforced, the rhythmical muscular contractions entering as an added factor to the pumping power of the heart, and the baths giving tone to the sluggish circulation in the periphery. The history of marked improvement in the patients presented by Dr. Cohen proved beyond a doubt that the treatment carried out by the exercises alone had proved eminently satisfactory. Dr. J. Madison Taylor quoted reports of cases showing the efficacy of this treatment of heart disease, and thought that it might also be of use in the vaso-motor ataxias. Dr. John H. Musser presented diagrams illustrating the decrease of cardiac dulness consequent upon a very limited course of the Schott gymnastics in a severe case of endocarditis with enlargement. In concluding the discussion, Dr. Cohen said that the only contra-indications to the treatment were advanced atheroma, arterio-sclerosis, and aneurism of the aorta.

At a stated meeting of the Pathological Society of Philadelphia, held January 28th, a unique specimen taken from the stomach of an idiotic boy was shown by Dr. Clarence White. It was shaped like a huge cigar, being 5 inches long by 1½ inches in diameter, and was made up of a tightly rolled mass of string, pieces of leather and the like. Curiously enough, the gastric mucosa was practically normal, section showing, however, an increase in thickness of the muscular coat from the futile efforts of the stomach to force the foreign body through the pylorus.

An obliterated innominate aneurism was exhibited by Dr. D. D. Stewart. The specimen was interesting from the fact that a number of years ago Dr. Stewart had inserted 10 feet of fine gold wire into the aneurism, when rupture seemed imminent, and by passing a current of electricity through the wire had caused the formation of a clot, with subsequent obliteration and cure. The patient had died very recently from hemorrhage from the middle cerebral artery.

In presenting specimens from two cases of perforation of the intestine in typhoid fever, Dr. D. L. Edsall adduced the fact that in one case the perforation had occurred during the plunge given in the course of the Brand treatment. During the discussion on the subject the conclusion was arrived at that if the diagnosis of perforation were made before general peritonitis had set in, surgical interference would at least be justifiable.

Dr. W. E. Hughes exhibited specimens showing a perforated duodenal ulcer, and a retroperitoneal sarcoma. Early in the history of the latter case the diagnosis of varicocele had been made, due to the fact that the symptoms pointed clearly toward that condition. The discussion of the case brought out the fact that the condition is always one peculiarly difficult to diagnosticate, also that in some instances a pronounced leucocytosis of the blood is noticed.

Dr. Alfred Stengel presented an amebic abscess of the liver, and demonstrated the presence of the amebæ. Always difficult to fix and stain, Dr. Stengel was able to show, not only the ordinary forms of the ameba, with its vacuoles, but also the peculiar reaching out of the ectosarc before division occurs.

Dr. Barker of Johns Hopkins University, Baltimore, read a paper before the Neurological Society, January 25th, reviewing Flechsig's work and discoveries in cerebral localization. Mentioning his methods of medullary staining as being accurately confirmed by the work done on central degenerations, Dr. Barker gave in detail the areas of the cortex cerebri mapped out by this mode of investigation. The newly discovered portions have mainly to do with sense perception, and occupy but a limited part of the external surface of the cerebrum. They are divided into three parts, the central and larger corresponding roughly to the ascending frontal or ascending parietal lobes, the anterior to the foot of the third frontal convolution, and the posterior to a limited portion of the tempero-sphenoidal lobe. Between the three are the two large association areas of doubtful function.

The American Antivivisection Society held its annual meeting in this city on January 29th. Dr. Matthew Woods, the president, in his annual address, said vivisection was undoubtedly on the increase, as shown by the greater number of experiments recorded in medical journals and by the efforts made by those connected with Pasteur institutes, and certain manufacturers, to create a demand for antitoxins. He recommended that the Society change its method of combating the evil, and search out, under capable medical direction, all varieties of cruel work by vivisectors and give it the widest publicity, mentioning the name and address of the perpetrator in every case.

TRANSACTIONS OF FOREIGN SOCIETIES.

Berlin.

CAN THE CARDIAC MUSCLE BE STENGTHENED BY EXERCISE?—A SUPPOSEDLY BENIGN POLYP FOUND TO BE MALIGNANT UPON MICROSCOPIC EXAMINATION—ABSCESSES FOR ONE YEAR AFTER INJECTION WITH DIPHTHERIA SERUM.

Hirschfeld discussed the possibility of *strengthening a weak heart by means of exercise* at the session of the Union for Internal Medicine held December 21, 1896. This idea was first advanced by Oertel. It does not apply to cases of valvular affection nor to those hypertrophies which follow luxurious living. In these latter cases partial starvation produces the best result, which explains the benefit derived from milk cures. Zuntz who investigated experimentally the influence of exercise upon the heart found that the increase in power of the voluntary muscles greatly exceeded the increase in power of the heart. In compensatory failures rest is indicated because the patient already has over-exerted his heart. But long-continued rest in old people acts unfavorably, as the physiologically necessary stretching of the heart-muscles is thereby omitted, while, on the other hand, increased bronchitis gives the right heart more work to do. In any case muscular exercise should be increased gradually, while its effect upon the heart, especially in stout people, is frequently observed.

At the session of the Medical Society held December 16, 1896, Falk presented a carcinomatous polyp which had been removed from the posterior wall of the cervix uteri of a woman aged forty-five years. The interest in the preparation lay in the fact that a small portion of the polyp was found upon microscopic examination to be distinctly carcinomatous. The uterus was therefore removed. At the point of attachment of the polyp there was a round-cell infiltration. Otherwise the organ was normal. The importance of microscopic examination of all polyps apparently benign was brought forward.

Gensichen referred to *an unpleasant personal ex-*

perience with Behring's serum. In November, 1895, he fell sick with diphtheria, and in order to hasten his recovery he injected into the left side of his abdomen, under aseptic precautions, a syringeful of Behring's serum, No. 2. Recovery from diphtheria was prompt. During the next three weeks he suffered from a terrible thirst without fever. Then there developed on the left side of his body, from the point of the injection to the axilla, large abscesses. These came slowly to a head, broke, and after a few days healed, while new ones constantly formed. For six months they were confined to the left side and then appeared also on the right side. More than a year later they were still forming, although their intensity had greatly diminished. Gensichen expressed himself as deeply impressed with the evil results which may follow the use of serum, and thought that its prophylactic use should be done away with.

This case called forth a lively discussion. **VIRCHOW**, who examined the pus from some of the abscesses, stated that he had not been able to find any trace of the bacillus of glanders but the pus contained almost a pure culture of staphylococcus. Similar cases of multiple abscesses of a chronic form are not uncommon as a result of infection from dead bodies. He was of the opinion that the infection was due to the injection but not to the serum.

EWALD also mentioned cases in which in spite of antiseptic precautions, abscesses followed injection and continued to form throughout several months.

HEUBNER, BAGINSKY, and **KATZ**, were also of the opinion that this case proved nothing against the use of preventive inoculations of diphtheria serum. Variot and Sevestre had made over four thousand inoculations without any serious results.

London.

TREATMENT OF CANCER BY DRUGS—THROMBOSIS IN TYPHOID FEVER—THE PLAGUE—MALIGNANT PAPILLOMA OF THE KIDNEY—DECREASE OF MALARIA IN LONDON—SURGICAL TREATMENT OF PNEUMOTHORAX—BIRDSHOT ENCAPSULATED IN THE EYE—PAROXYSMAL TACHYCARDIA.

EUSTACE read a paper on *the treatment of cancer by drugs* before the Southeastern Branch of the British Medical Association at a meeting held December 10, 1896. He related a case in which he had treated a rodent ulcer of the side of the nose. The tumor was of six years' duration and had recurred after excision. Chlorate of potash was administered internally, and a saturated solution of the same salt was kept upon the wound. In three days the improvement was remarkable and the ulcer was completely healed at the end of a week. There has been no recurrence in the two years which have since relapsed. Although in no way affecting his preference for the operative treatment of cancer the author thought such instances as these are not to be looked upon as mere coincidences. They ought to be fully investigated and reported.

GOSTLING spoke of *thrombosis in typhoid fever* which he said might occur either as a sequel or a complication of the disease. In the former case the prognosis is much more grave than in the latter. Thrombosis as a sequel occurs most frequently in the external and common iliac and femoral veins, which may be felt as solid cords. The symptoms are pain and tenderness in the region of the vein, with swelling and edema of the limb. The temperature is about one degree above normal. The symptoms subside in a week or ten days.

Thrombosis as a complication gives an entirely different picture. Rigors, which are often repeated, irregular temperature, frequent and irregular pulse, irregular respiration, and a mental condition apprehensive of death are the usual symptoms. Death preceded by coma occurs in the large majority of such cases. The danger in complicating thrombosis lies in the breaking down of the infected clot and consequent pyemia.

CANTLIE addressed the Epidemilogical Society December 18, 1896, on the spread of the plague. His paper has already been published in full in the MEDICAL NEWS of January 23, 1897. In the discussion, Lawson, whose experience in this disease extends to over five thousand cases, said that he had never been able to find plague-bacilli in the soil. He believed that the popular idea that an epidemic among rats precedes each epidemic among men is unfounded. Men and rats are affected simultaneously, but the disease runs a more rapid course in rats than in men.

PAYNE said that the description of these recent epidemics corresponds closely with those in Europe in former centuries. He thought that the practical immunity of India is accounted for by the fact that the isothermal line of 78° only just touches the north of India. It has long been held that a persistent high temperature will stop an epidemic.

At the session of the Pathological Society of January 5th, **DREW** described a *villous papilloma of the kidney, ureter and bladder*, in a man aged fifty-six, who for 3½ years had suffered from renal colic in the left side, and profused hematuria. The kidney was opened but no calculus was found. For 2½ months the wound discharged pus containing epithelium. At autopsy the left kidney was found hydronephrotic from obstruction, due to the villous growths in the renal pelvis, ureter and bladder. The author thought that the growth had begun in the pelvis of the kidney and had subsequently extended downward. Its malignant character was shown by the large lymphatic glands adherent to the kidney and extending upward along the aorta. Secondary nodules were also found in the liver. Drew had collected eight examples of papillomata of the pelvis of the kidney, some which were associated with the presence of calculi.

At a meeting of the British Balneological and Climatological Society held December 9, 1896, **EWART** read a paper on the *decrease of malaria in London.* This decrease has gone on since the end of the eighteenth century, but has been especially marked during the last forty years. The author sent out circulars to all the medical institutions of London, and the answers received gave the clearest evidence of the disappearance for many years past of the "London ague," and of the rarity even of any imported cases. The general conclusion was that ague has been dying out not only in London but also in those country districts previously notorious for their malaria. Various causes have been assigned for this decrease, such as systematic drainage and sanitary reform, as well as the improved hygienic and material conditions of the people. These factors, however, do not entirely account for the present remarkable immunity from malaria which bids fair to be reckoned in England within a few years as one of the extinct diseases.

BLAND SUTTON read a paper on *wandering spleens* at a meeting of the MEDICAL SOCIETY held January 11. The cause of the increased mobility is little understood, but it is noticeable that wandering spleens are most frequently met with in women who have borne children. The effects upon the spleen are (1) engorgement to a varying degree; (2) axial rotation, which if acute causes the same symptoms as occur in acute rotation of an ovarian cyst or in strangulated hernia; (3) atrophy, which occurs if the torsion is sufficient to obliterate the splenic artery. Symptoms due to the traction of the spleen on other organs may also be present. Diagnosis is difficult. A spleen in the pelvis has more than once been taken for a fibromyoma of the uterus. Sutton spoke of splenectomy as an entirely justifiable and highly successful operation. He had collected reports of a score of such operations performed without a death. Attempts made by a number of surgeons to suture the spleen in the left hypochondria showed clearly that this operation is a more dangerous one than splenectomy and that recovery from it is not so prompt. He regarded the spleen as a highly specialized lymph gland and saw no greater objection to its removal than would apply to a mass of enlarged glands. He had never seen in his own cases any evil manifestations follow its removal.

BALLANCE mentioned a case in which the patient rapidly recovered from the immediate effects of splenectomy, but after about ten days began to suffer from moderate pyrexia, quick pulse, anorexia, emaciation, loss of strength, increased quantity of urine, and griping pains in the abdomen. The leucocytes were greatly increased. He had seen the same symptoms in two adult males after excision of the spleen for rupture, while a boy whose spleen he had removed did not present these symptoms. Old dogs suffered similar symptoms after splenectomy but young animals did not. The condition of the blood became normal in his cases in about ten weeks, and ultimately all the patients completely recovered their weight and health. Some of these patients were fed after operation on raw or slightly toasted spleens.

SUTTON could not believe that a diet of spleens could have any effect in relieving patients of the symptoms Ballance spoke of. In none of his own cases had he observed such symptoms. The patients were all thin before operation, but did not show afterward any increase in emaciation.

WEST read a paper on *pneumothorax* based upon three sets of statistics including in all 164 cases with a death-rate of about seventy per cent. The causes of death were three-fold according as it was due to (*a*) the pneumothorax itself, (*b*) the resulting empyema; (*c*) the disease which caused the pneumothorax, namely, phthisis. Most statistics give a percentage of recoveries of not more than ten per cent. The most favorable class of cases includes those in which no effusion takes place and the air is simply absorbed. In the next favorable class, the effusion is serous and may be absorbed without paracentesis. If the effusion is purulent the prognosis is more grave, but recovery is still possible, especially after early operation. Cases of recovery were cited to illustrate these three classes.

DUCKWORTH thought that the presence of pus in the pleural cavity is less harmful than might be expected and he therefore discouraged interference in such cases.

HALL said that rest in bed with the administration of laxatives to prevent straining at stool was the only treatment required.

FOWLER and HUBBARD also advised against operative interference.

WEST maintained, however, that early removal of the pus by modern methods is advantageous in many cases. Good results can no more be expected in neglected pyopneumothorax than in neglected empyema.

CARTER reported to the Clinical Society January 8th a case of *gunshot wound of the eye* in which two pellets of birdshot were retained and incapsulated with preservation of sight. They penetrated the lower eyelid and pierced the sclera below the cornea. Carter saw the case two days after the accident, and after dilating the pupil was able to see that the retina had been wounded. An expectant treatment was pursued and the eye recovered without inflammation or trouble of any sort. He thought that the shot had been sterilized by heat and possibly cleansed by passing through the lower eyelid. Although he did not know of any precise observation as to the temperature of heated missles, as a matter of practical experience he had seen several cases in which heated pieces of metal had penetrated the lens and had remained there as sterile bodies without exciting inflammation. He thought it was always safe to pursue expectant treatment for about three weeks as sympathetic ophthalmia rarely occurred before that time.

HERRINGHAM described a case of *paroxysmal tachycardia* in a girl aged eleven. The attacks, to which she had been subject for five years, began suddenly without apparent cause. They lasted for periods varying from thirty-six hours to thirteen days and always ended during sleep. In an attack the pulse was small and soft and could not be counted. Pulsation of the heart was very forcible and occurred from 240 to 260 times a minute. There was little or no pain. Respiration was rapid but there was no sigh of pulmonary or general edema. During a paroxysm sleep was restless, and did not alter the cardiac rate. The patient was a big, plump, rosy girl, but some enlargement of the heart could be made out, and from the study of this case and of other reported cases, Herringham was inclined to believe that these hearts were structurally unhealthy. In this case treatment by various drugs had utterly failed to prevent the recurrence of the paroxysms. The Schott treatment by baths and exercises proved equally useless, nor did it reduce the size of the heart.

WEST said that almost all of these patients had dilated hearts. He mentioned the case of a policeman who although able to remain on duty during his paroxysms, yet developed at these times cardiac murmurs which could be heard at a distance of two feet.

SOCIETY PROCEEDINGS.

NINETY-FIRST ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK.

[Concluded.]

Held in Albany, January 26, 27, and 28, 1897.

[From our Special Correspondent.]

James D. Spencer of Watertown, President.

Second Day—Wednesday, January 27th.

(Morning Session—*Continued.*)

E. K. Dunham, M.D., of New York, discussed the

METHODS OF PREVENTION OF POLLUTION OF WATER.

He said that as the usual streams of water were the natural drains we could not, in practice, exclude contamination from sewage, hence we must destroy it. This is best done by putrefaction, if allowed to take place in the superficial layers of the soil, in contact with an abundance of oxygen.

F. C. Curtis, M.D., of Albany, read a paper on the

LIFE HISTORY OF THE TYPHOID BACILLUS OUTSIDE THE BODY.

He said that the typhoid bacillus is an easy prey to many other bacilli, and its complete extinction in a sewer is only a matter of a few days. There is no ground for belief that these bacilli are present in sewer-air; these germs are not inhaled, but ingested. The typhoid bacillus retains its vitality in running water for a long time, and is not destroyed by freezing.

J. S. Ely, M.D., of New York, discussed the

BACTERIOLOGICAL DIAGNOSIS OF TYPHOID FEVER.

He said that, according to some observers, the typhoid bacillus could be detected in the urine of a typhoid fever patient in at least fifty per cent. of the cases examined. Puncture of the spleen is so dangerous as to be hardly justifiable, but certainly in a large percentage of cases the typhoid bacilli could be found in blood from this source. At present, the serum diagnosis by means of an examination of the blood, offered the best prospect of rendering valuable assistance in diagnosis.

W. P. Northrup, M.D., of New York, read a paper on

TYPHOID FEVER IN CHILDREN.

Referring entirely to children not over two years old, he said that out of 2000 autopsies that he had made on children under three years of age, he had not once met with evidences of typhoid fever, and during twenty-five years not a single case had been recorded among the large number of children at the New York Foundling Asylum. As about 1100 children from this institution are placed out to nurse in the tenements, it was certain that many children must have been exposed to typhoid infection. In the Stamford epidemic of last year he had seen, out of 400 cases there, three undoubted instances of typhoid fever in young children.

W. G. Thompson, M.D., of New York, presented a paper on the

IMPORTANCE AND PRACTICAL METHODS OF DISINFECTION OF EXCRETA OF TYPHOID PATIENTS.

He said that the most generally useful disinfectants for cases of typhoid fever were corrosive sublimate (1–500) and carbolic acid (ten per cent.) solutions. The former was injurious to the plumbing, and unless rendered acid, was liable to be materially weakened by the formation of an albuminate. The bed-pan should always contain some of the disinfectant, and after defecation, the perineum should be cleansed with corrosive sublimate solution. Thermometers, rectal tubes, and enema syringes, should also be disinfected, and the bed-clothing, bath tub, and nurse's hands, should not be overlooked in this connection. The stools should be disinfected for at least ten days after the temperature has permanently dropped to the normal. In the country the stools should either be mixed with sawdust and cremated or buried in a trench four feet deep.

Professor William T. Sedgwick, of the Massachusetts State Board of Health, spoke of several unsuspected sources of water contamination, *e.g.*, bathers using bodies of water used for water supply; carelessness of crowds at picnic grounds bordering on lakes, etc. He stated that whereas formerly typhoid fever was rampant in the city of Lawrence, Mass., now, since the introduction of a municipal filter in the water system this disease had almost disappeared.

Afternoon Session.

J. H. Glass, M.D., of Utica, read a paper on

DOUBLE MURPHY BUTTON ANASTOMOSIS.

He reported several cases in which he had used this device, and asserted that not only his personal experience, but the records of many surgeons showed that no method was so rapid and so certain as that with the Murphy button.

L. B. Bangs, M.D., of New York, reported

SOME CLINICAL CASES OF DISEASE OF THE TESTICLE.

(See page 161.)

B. Farquhar Curtis, M.D., of New York, said that enlargement of the testicle might be due to tuberculosis, syphilis, or a neoplasm. Exploratory incision should be used early in all doubtful cases.

Eugene Beach, M.D., of Gloversville, reported

A RARE COMPLICATION OF ACUTE RHEUMATISM.

A healthy man, immediately after sleeping in a damp room and bed, developed a tender swelling of one testicle. After three weeks he had pain on the outer side of both thighs, and two weeks later a mild cystitis and urethritis. This was followed by an exacerbation of the orchitis, and five days later by a pronounced attack of acute articular rheumatism. Careful investigation failed to show any infection.

H. S. Drayton, M.D., of New York, presented some

NOTES OF CASES IN SUGGESTIVE (HYPNOTIC) THERAPEUTICS.

As a result of years of study, Dr. Drayton said that he had come to the conclusion that the hypnotic state is consistent with man's physiology, and is not a pathological phase of either mind or body; also, that in hypnotic suggestion we have an agency of almost unlimited power in the treatment of many diseases. Reports of several cases were read in illustration.

Dr. Wm. James Morton of New York said that he had learned first of hypnotism from Charcot, and had practised it largely for years, but he had become convinced that it was a most pernicious practice, because it diminished the patient's power of resistance and lowered him both morally and intellectually—in other words, the remedy is worse than the disease.

Dr. Drayton replied that we should employ hypnotism just as we would other powerful and dangerous remedies. It was not necessary to go so far as to break down the patient's will.

A. M. Phelps, M.D., of New York, read a paper on

THE MANAGEMENT OF CLUBFOOT.

He advised that *immediately* after the birth of the child with clubfoot the treatment of the foot should be begun. The foot should be placed by manual force as nearly as possible in the normal position, and held there by means of strips of adhesive plaster and a roller bandage. If a continuance of this treatment fails to effect a cure by the time the infant is three months old, the surgeon should at once operate. The operation should consist in a series of tenotomies, beginning with the tendo Achilles. Every resisting structure should be cut successively until the foot can be *super*-corrected. If only corrected, the weight of the body will cause relapse. Having secured super-correction, the only apparatus needed is a plaster-of-Paris shoe. If it is impossible to super-correct the foot, a machine should be used to aid the hand in correcting the deformity, using, if necessary, a force of 1200 or 1500 pounds. The surgeon should, in these difficult cases, cut the anterior division of the deltoid ligament and the long peroneus tendon. Where there is actual bone deformity, it may be necessary to divide the neck of the astragalus, take a wedge out of the os calcis, remove the cuboid and scaphoid bones, or lastly, to perform Pirogoff's amputation. In 500 cases of "open operation" for clubfoot, he had found it necessary to perform osteotomy in only seventeen cases.

Rectal Discussion.

Joseph M. Matthews, M.D., of Louisville, Ky., opened this discussion with a paper entitled

STRICTURE OF THE RECTUM; ITS ETIOLOGY AND TREATMENT.

He first replied to some criticisms of Dr. Kelsey. He said that every authority now believed that stricture of the rectum originates as a secondary or tertiary formation. He did not believe that stricture of the rectum could occur from the extension of a chancrous process. Undoubtedly stricture occasionally results from inflammation produced by trauma. In an experience of nineteen years with rectal diseases, he had not met with a single case of stricture that could be attributed to dysentery. From a pathological standpoint the rectum could not often be the seat of such a stricture. When a connective tissue stricture had once formed, no amount of treatment would cure it.

Daniel Lewis, M.D., of New York, continued the discussion with a paper on

THE SURGICAL TREATMENT OF CANCER OF THE RECTUM.

He said that in every case of cancer of the rectum one must decide (1) as to the general condition of the patient; (2) the extent to which the adjacent organs and tissues are infiltrated; and (3) what operation is best if complete removal be indicated. Operation, in his opinion, was not justifiable unless there was a good prospect of the disease being completely removed. The disease should not extend above the peritoneal pouch, or implicate the bladder or vagina, or the inguinal glands. The speaker preferred the Volkmann to the Kraske operation, believing it to be less dangerous.

Robert T. Morris, M.D., of New York, discussed

THE PROPER METHOD OF TREATING INTERNAL HEMORRHOIDS.

He presented a condensed classification of the anatomical, pathological, and physiological points involved, and showed that we should not do the Whitehead operation, or the so-called American operation, as it removes the structures carrying the special rectal sense. If primary union were not secured, grave complications would arise from the contracting scar. Injecting piles with carbolic acid or astringents is very dangerous, as septic emboli are liable to be carried to the liver or heart, and the sloughing may be uncontrollable. Crushing methods expose the patient to septic embolism and septic infiltration. The clamp and cautery method was successful in a few expert hands, and was less dangerous, but healing was often tedious. In his opinion the two best methods were, (1) ligation and excision of the pile tumor, and (2) excision of the piles and suture of the incisions. The latter was his favorite method.

George R. Fowler, M.D., of Brooklyn, read a paper on

PROLAPSE OF THE RECTUM,

which will appear in a future number of the Medical News.

Dr. B. Farquhar Curtis said that most surgeons would agree with Dr. Matthews regarding the etiology of stricture of the rectum. He would agree with Dr. Lewis regarding the suitability of operating from below in cases of epithelioma of the anus, but for higher strictures such a method would involve an unnecessary sacrifice of the sphincter.

The speaker stated that the operation of colotomy or colostomy was done for two indications, *viz.*: (1) To overcome obstruction low down, and (2) to divert the contents of the bowel from the ulcerated surface. Fulfilling this second indication resulted, in exceptional cases, in a complete cure of ulceration of the rectum. An improvement—sometimes very marked—almost invariably follows colotomy, but the amount of relief will depend, to some extent at least, upon the temperament of the individual. Without doubt this operation prolongs life in cases of malignant disease; nevertheless, extravagant claims had been made for colotomy in this class of cases. If the mechanical obstruction was so great as to indicate the need of an artificial anus, colotomy should be performed, but only under these circumstances.

Dr. James P. Tuttle, of New York, said that out of his record of 200 cases of stricture of the rectum, sixty-eight per cent. were non-malignant, and about the same percentage of these were non-syphilitic. He had yet to see the proof that a single case of stricture of the rectum can occur without previous syphilitic ulceration. The evidence of such ulceration was to be found in the presence of bluish-white cicatricial tissue just below the stricture. There is no such cicatricial condition in malignant disease. Resection of the rectum is the only safe means of curing connective tissue strictures. From 1885 to 1891, or just after the introduction of Kraske's operation, 500 cases were reported—300 perineal and 200 sacral operations. The mortality then from the former was 16, and from the latter, 19 per cent. From 1890 to 1896, he had reports of 175 unpublished operations in this country. These gave a mortality of 11.5 per cent. by the sacral, and a little over 10 per cent. by the perineal method. The high operations are but little more dangerous than those for disease lower down; the prognosis depends, not upon the height to which the disease extends, but to the amount of involvement of neighboring organs. In operating, he preferred the osteoplastic method, and dissected out the whole gut before opening it.

Dr. Matthews, in closing the discussion, said that a far better method of treating prolapse of the rectum in infants than the use of nitric acid or the actual cautery, consisted in giving a preliminary purge, and then keeping the little one in bed for six days with a dozen strips of adhesive plaster across the nates.

Maurice H. Richardson, M.D., of Boston, presented a paper on

ACUTE INFLAMMATION OF THE GALL-BLADDER.

He said that he had only met with this rare disease five or six times, yet its onset was violent and relief was urgently demanded. The cause is an invasion of the gall-bladder by microörganisms, most commonly the colon bacillus. The source of the infection is probably the duodenum, although the blood is a possible channel. In these cases of acute infection the gall-bladder becomes quickly distended, and assumes a cylindrical shape, and because of this, usually assumes a position in which it escapes the palpating finger.

The symptoms are sudden, severe and paroxysmal pain to the right of the epigastrium, followed by vomiting, diffuse tenderness, abdominal distension, constipation, acceleration of the pulse, and elevation of temperature. The pain is often not exactly in the region of the gall-bladder. The condition may be very easily confounded with appendicitis.

The treatment should consist in immediate operation. The incision should be made about half way between the appendix and the gall-bladder, and the fundus of the latter should be sutured to the edge of the incision. The gall-bladder should then be freely opened, drained, and washed with sterilized water.

In these acute cases the prognosis is grave without interference, but with interference is encouraging.

Dr. A. Vanderveer said that he had met with two of these fulminating cases, and in both he had drained an abscess of the gall-bladder with good result.

Dr. George R. Fowler said that he had operated in three of these acute cases under the belief that he was dealing with appendicitis. In cases where the fistulous opening persists, the only remedy after this operation is total excision of the gall-bladder.

Dr. W. G. Macdonald and **Dr. Wm. R. Howard**, reported similar cases.

James Spencer, M.D., of Watertown, the President of the Society, delivered the anniversary address, taking for his theme

THE COUNTRY DOCTOR.

He said that the country doctor may theorize, but he must ever be practical; not having the benefits of free consultation with eminent brethren in the profession, he must stand absolutely on his own merits. There is no hospital, with its corps of trained nurses to assist him, and no daily papers to herald his successes. Yet his arduous life has its compensations. We all know how pain and terror vanish in the presence of the physician; the most intimate secrets are confided to his keeping, and wounds not only of the body, but of the soul, are laid bare before him. The country doctor must, indeed, be a man of many parts—a drudge, a hero, a martyr oft-times, for the cause he represents. He has a large sphere for usefulness in pointing out to his fellow men how they may best avoid disease. But unless the physician is constantly watchful concerning his own mode of living, it will not be long before he is met with the cry, "Physician, heal thyself."

Third Day—Thursday, January 28th.

Wm. James Morton, M.D., of New York, offered a resolution for

THE ABOLITION OF THE NOMINATING COMMITTEE.

He asserted that members of this committee came to Albany already instructed for whom to vote, and, as a result, the Society at large was slaughtered by machine politics. The resolution was referred to the Committee on By-laws.

Place of Meeting.

O.F. Kintoch, M.D., of Troy, offered an amendment making it obligatory for the Society to meet alternately in New York, Albany, and Buffalo. This was also referred to the Committee on By-laws.

J. B. Ransom, M.D., of Dannemora, read a paper entitled

THE NECESSITY OF NEW METHODS OF EARLY DIAGNOSIS IN TUBERCULAR DISEASE TO CURATIVE TREATMENT.

He said that there was a great need for a harmless but sure test for the presence of tuberculosis in the human being. Among cattle, tuberculin was looked upon as an excellent test. He believed tuberculosis to be a largely curative disease, and one which was, to a certant extent, self-limited. There was no good reason at the present time for believing that the presence of tubercle bacilli justified a fatal prognosis.

The treatment should be prompt and energetic, and carried out carefully, in the full belief that the disease could be cured. The treatment naturally divided itself into: (1) climatic, (2) nutritive, and (3) medicinal. He believed that in a locality for the climatic treatment of tuberculosis there should be not only an equable temperature and pine woods in the neighborhood, but there should be winds of sufficient velocity to keep the atmosphere pure. Damp houses are particularly favorable to the development of tuberculosis. A change of climate is important, if only as a precaution against reinfection. It should be a fixed rule that a tuberculous patient should never return to the environment in which he contracted the disease.

The speaker said that in pulmonary affections cough is largely a matter of habit, and the patient should be instructed to avoid coughing except when the secretions had accumulated to such an extent as to make it possible to expel them by a short muscular effort.

DR. E. F. BRUSH of Mount Vernon protested against the very general assumption by the medical profession that the tuberculin test was a reliable test for tuberculosis in cattle. It was not reliable.

DR. THORNBURY said that Dr. Salmon, who was an authority on this subject, had stated that the tuberculin test was reliable in ninety-nine per cent. of cases in cattle, and the test was universally employed by the United States Department of Agriculture. Personally, he looked upon it as absolute means of diagnosis.

DR. F. C. CURTIS asked if tuberculosis were not more prevalent and attended by a larger fatality in prisons.

DR. RANSOM replied that a fair estimate of the death-rate from tuberculosis in penal institutions all over the world, would be about fifty-five per cent.

GEORGE SEYMOUR, M.D., of Utica, reported

A CASE OF HERNIA OF A SARCOMATOUS OVARY.

The patient was a woman of about forty years of age, the mother of seven children. On November 20, 1896, he had operated upon her, expecting to find an ordinary inguinal hernia, incarcerated, but not accompanied by intestinal obstruction. It was found to be attached by a long pedicle, extending from the body of the uterus within the pelvic cavity, out through the internal ring to the under side and upper end of the tumor as it lay in the inguinal ring. The pedicle was tied with a strong silk ligature. The severed end of the portion left within was sutured with catgut into the internal abdominal ring. The portion of sac was tied with catgut and excised. The tumor was oval, measured 4 inches in length and 8 inches in circumference, and weighed 5¾ ounces. Six weeks after the operation the large ligature of the pedicle had passed out through the sinus, and the wound had closed. Microscopic examination by the pathologist showed the tumor to be a spindle-cell sarcoma of the ovary. The woman is now in apparent good health, and has no pelvic discomfort. Menstruation had recurred twice, and apparently normally, since the operation. The speaker said that he had been unable to find any literature on record of hernia of a sarcomatous ovary. Cystosarcoma was more often mentioned than the other varieties of sarcoma. The case must be regarded as exceedingly rare.

DR. W. G. MACDONALD said that in a considerable operative experience he had seen only one case in which the hernial sac contained an ovary. It was not improbable that a small and ill-developed ovary might become incarcerated in the inguinal canal, and then, as was often the case with an undescended testicle, undergo sarcomatous degeneration. In most cases of ovarian hernia, vomiting was a prominent symptom, and its absence in the case just reported was therefore worthy of note.

The Society then adjourned.

REVIEWS.

TRANSACTIONS OF THE COLORADO STATE MEDICAL SOCIETY. Twenty-sixth annual convention. Denver, June, 1896.

THERE is the usual amount of good material in these Transactions. The articles show progressiveness and a great deal of original research. In addition to the record of the meeting, a list of the members of the Society is also printed.

TRANSACTIONS OF THE FIFTY-FIRST ANNUAL MEETING OF THE OHIO STATE MEDICAL SOCIETY, held at Columbus, May 27, 28, and 29, 1896.

BESIDES the address of the president, Dr. Daniel Millikin, on "A Study in Credulity," this volume contains many suggestive and valuable articles. "The Technic of Laryngeal Operations," by Dr. G. W. Crile; "The Dermatoses Due to Vegetable Parasites," by Dr. W. T. Corlett, and "A Plea Against the Meddlesome Treatment of Acute Gonorrhea in Women," by Dr. M. Rosenwasser, are among the best of many good contributions. To judge from this report, the meeting must have been a profitable one.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM DECEMBER 29, 1896, TO JANUARY 4, 1897.

The leave of absence on surgeon's certificate of disability, granted Major William C. Shannon, Surgeon, is extended three months on surgeon's certificate of disability, Fort Custer, Mont.

The leave of absence granted Captain William L. Kneedler, Assistant Surgeon, for seven days, San Diego Barracks, Cal., is extended twenty-three days.

Major William R. Hall, Surgeon, relieved from duty at Whipple Barracks, Ariz., and ordered to Washington, D. C., for duty.

First Lieutenant Irving W. Rand, Assistant Surgeon, relieved from duty at Fort Clark, Tex., and ordered to Fort Huachuca, Ariz., for duty.

THE MEDICAL NEWS.
A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

THE DIFFERENTIAL DIAGNOSIS OF VARIOUS FORMS OF MALARIAL FEVERS BY MICROSCOPIC EXAMINATION OF THE BLOOD.

BY ALBERT WOLDERT, Ph.G., M.D.,
OF TYLER, TEX.;
FORMERLY RESIDENT PHYSICIAN AT THE MERCY AND ROSELIA HOSPITALS, PITTSBURG, PA.

To bring some order out of the chaos that surrounds obscure varieties of malarial and other forms of fever, greater exactness of observation is required. When we have one cause and one effect, the conclusion can be easily determined; but when there is a multiplicity of causes giving rise to confused results, the individual causes are often difficult to isolate and establish. We have obtained relatively few facts which can be considered absolute in the life history of the different forms of malarial parasites. That these germs gain entrance to the blood, that they grow at the expense of the corpuscles, that they finally break down the globules, that they undergo segmentation, and that these processes give rise to fever, has been proved beyond any reasonable doubt. Some difference of opinion still exists as to (1) whether there is but one specific type of germ giving rise to all the varieties of malarial fever, or (2) whether there is a different organism for each form. Laveran and the French school incline to the former view, while the Italian school, with Golgi at its head, and the American observers hold to the latter belief.

We should be careful, then, to verify by experience the identification of one type of germ, associate it with a specific fever, vary the circumstances, and confirm that experiment by repeated examinations, in order to present conclusive evidence.

This has been undertaken by Thayer and Hewetson, whose observations have extended over a series of 600 cases. This paper will, therefore, adhere in the main to the words used by them, as well as to the microscopic appearances which they have so accurately delineated. Adopting their classification of the organisms, herewith is submitted as an aid a differential diagnosis of the various forms of malarial parasites as they appear during different periods of their cycle.

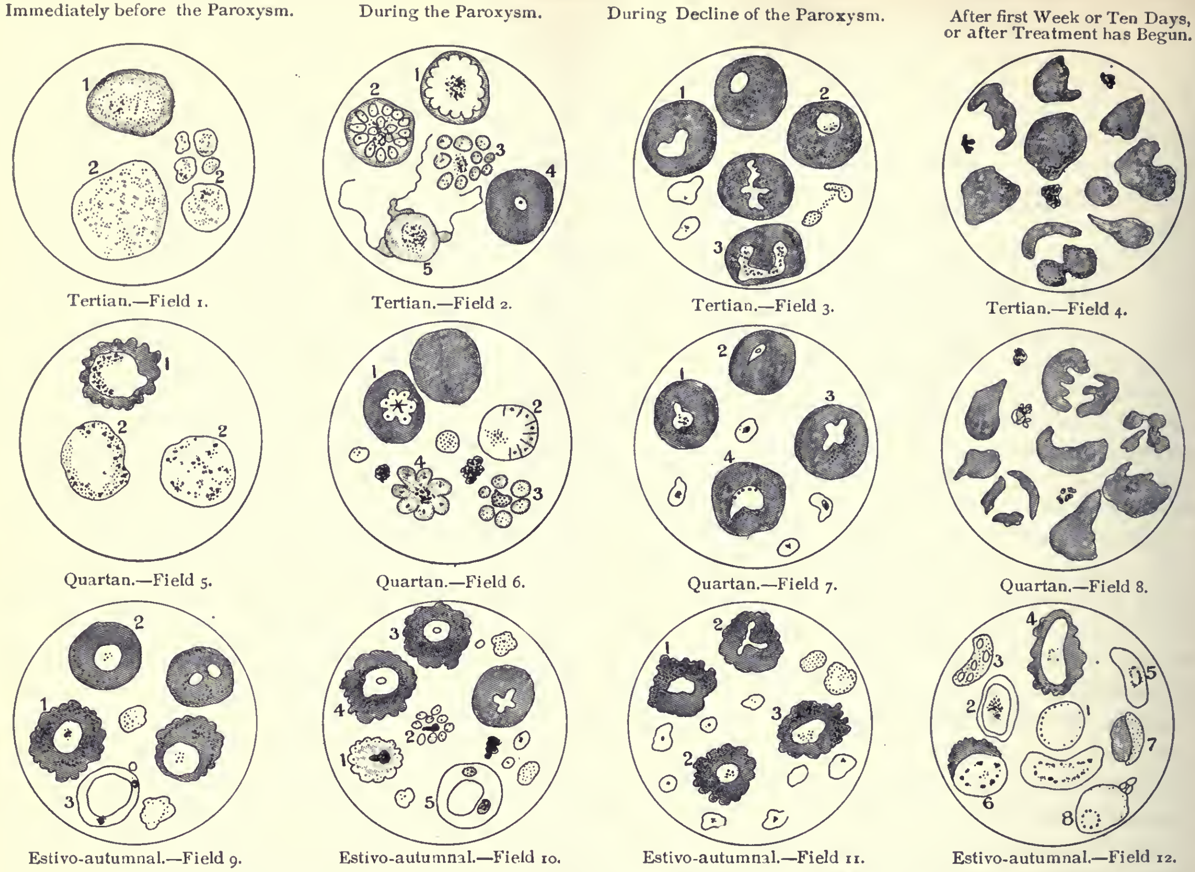
SUMMARY.

The paroxysm is divided into (1) the chill, (2) the fever, and (3) the sweating stage. The chill has no fixed place during the rise of fever; it may occur early or it may only take place at the acme; it usually occurs early in the paroxysm. The *interval* in malarial fevers is the time intervening between the beginning of one paroxysm and that of the next. It is to be distinguished from the *remission* or the *intermission*, which is the period between the end of one paroxysm and the beginning of the next. In quotidian fever the interval is twenty-four hours, and the paroxysms return daily at the same time. In tertian fever the interval is forty-eight hours, and the paroxysms return every other day at the same hour. In quartan fever the interval is seventy-two hours. In the tertian form we predict that a paroxysm will occur at once if radiating lines are seen to appear with the concentration of the pigment in the center of the ameboid cell.

The administration of quinin makes it difficult and often impossible to find the youngest forms of the plasmodia in the blood. It is essential in making a correct diagnosis that the examiner should have a good microscope with an oil immersion lens. No one should undertake the study of pathologic blood without having previously studied normal blood. One type of organism never changes its original type. In order to differentiate the special type of organism, it is best to select the blood during the cold stage of the paroxysm. It can only be identified specifically by having an acquaintance with the different varieties. In this country, the organisms of the estivo-autumnal and tertian varieties of malarial fever are the ones most commonly found, as the quartan occurred only five times in a series of over six hundred cases observed by Thayer and Hewetson.

We differentiate, then, by observing (1) their relative size, (2) the movement of pigment, (3) the color of the corpuscles, (4) the manner of division, (5) by the study of the extra-cellular organisms, and (6) by the contents of the leucocytes.

There may be infections by more than one group of the same kind of parasite, which infection occurs at different times; they will mature at different intervals, and there will be irregular chills and fever; or there may be infections at different or the same time, by different varieties of organisms, also giving rise to irregular chills and fever. In simple tertian fever there is infection by only one group of the same kind of parasite, but if there is a double infection



Immediately before the Paroxysm. During the Paroxysm. During Decline of the Paroxysm. After first Week or Ten Days, or after Treatment has Begun.

Tertian.—Field 1. Tertian.—Field 2. Tertian.—Field 3. Tertian.—Field 4.

Quartan.—Field 5. Quartan.—Field 6. Quartan.—Field 7. Quartan.—Field 8.

Estivo-autumnal.—Field 9. Estivo-autumnal.—Field 10. Estivo-autumnal.—Field 11. Estivo-autumnal.—Field 12.

MICROSCOPIC APPEARANCE OF THE BLOOD IN THE DIFFERENT FORMS OF MALARIAL FEVER.

Immediately Before the Paroxysm.

Tertian.	Quartan.	Estivo-Autumnal.
1. The organism is now full-grown, pale, indistinct, and ameboid (field 1, Fig. 1). Sometimes fills the entire corpuscle, which has become larger and decolorized. The corpuscle may at this stage be represented by a faint, pale rim about the parasite.	1. The organism, when full-grown, is smaller than those of the tertian type (field 5, Fig. 1), and is more refractive. The corpuscle, instead of being expanded and decolorized, appears smaller, shrunken, and darker in color, often resembling old brass.	1. The full-grown forms are generally not one-third as large as the red corpuscles, which have the same appearance and are crumpled same as in quartan type (field 9, Fig. 1). Some of these organisms are seen to contain a small, central, solid clump of motile or non-motile pigment granules about the center of the hyalin body. At a certain stage (field 5, Fig. 2) it seeks the internal organs (spleen, bone-marrow, etc.), where it undergoes segmentation.
2. Leucocytes do not contain similar blocks of pigment as the estivo-autumnal.	2. Leucocytes do not contain similar blocks of pigment as estivo-autumnal.	2. They are always associated with leucocytes containing similar blocks of pigment (field 9, Fig. 3).
3. Pigment is reddish brown.	3. The pigment is in larger blocks than tertian, and is darker in color.	3. The pigment granules are fewer in number and smaller in size than in the other varieties of parasites.
4. Occasional pigmented bodies may be observed outside of the red cells free in the plasma (field 1, Fig. 2), some of which are twice as large as the red cell, and often undergo gemmation (budding) process.	4. The extracellular bodies are rarely larger than the red corpuscles (field 1, Fig. 2).	4. Extracellular bodies of different sizes and shapes.
5. Some of these extracellular bodies develop flagellæ, usually about twenty minutes after blood has been withdrawn.	5. Extracellular bodies develop flagellæ usually about twenty minutes after blood has been withdrawn from circulation.	5. Flagellation.
6. Period of incubation, ten days.	6. Period of incubation, thirteen days.	6. Period of incubation, three days.
7. Cycle of development, forty-eight hours.	7. Cycle of development, seventy-two hours.	7. Cycle of development, twenty hours or less to forty hours or more.
8. Chills in eighty-eight per cent. of the cases.	8. Of the five cases observed by Thayer and Hewetson, all had chills.	8. Chills in sixty-two per cent. of cases.
9. In twenty-nine per cent. of cases there are more than one group of organisms present at the same time. Double tertian in twenty-nine per cent. of the cases. Out of 542 cases of malarial fevers, sixty per cent. were tertian (Thayer and Hewetson).	9. Out of 5 cases in the 542 observed by Thayer and Hewetson, there was a triple infection in three cases. No double infections.	9. Several groups of organisms are often present at same time. Out of 542 cases, twenty-nine per cent. were estivo-autumnal.

DURING THE PAROXYSM.

Tertian.	Quartan.	Estivo-Autumnal.
1. At the time of the paroxysm, the reddish brown pigment gathers in a clump in the center of the organism, while the rest of the protoplasm looks pale and granular, with radiating lines toward the center. This striation first appears near the periphery (field 4, Fig. 1). These lines become more distinct, until finally the central clump of pigment is surrounded by fifteen or twenty glistening hyalin segments, irregularly arranged (field 2, Figs. 2, 3). This segmentation (sporulation) is always coincident with the paroxysm. At this time we also see similar hyalin bodies within the red cells (field 2, Fig. 4). Segmentation may also occur before the organism is full-grown.	1. The process of the accumulation of pigment in the center of the quartan organism gives pictures which one does not see in the case of the other varieties of parasites, namely, the arrangement of the pigment in a star-shaped form (field 6, Figs. 1, 2), as though it tended to arrive at the center of the body by means of currents which flow inward from the periphery. When the paroxysm occurs, the black pigment gathers in the center in a solid clump, while the protoplasm looks granular; and finally a radial striation occurs, and from six to ten hyalin segments are set free (field 6, Figs. 3, 4).	1. No full-grown organisms are present in the peripheral circulation at this time, and blood must be drawn from the spleen if we desire to see segmentation (field 10, Figs. 1, 2). The advanced segmentary form shows no traces of the corpuscle. Both in the number of segments and manner of division, this type of organism closely resembles the tertian variety. Sometimes, if blood is taken from the peripheral circulation, we may see refractive, oval-shaped bodies situated in crumpled corpuscles having a dark greenish cast. As it becomes larger, there is a small collection of non-motile or slightly motile pigment granules about the center of the body (field 10, Figs. 3, 4). At this time the organism is about one-third diameter of red cell, and has a peculiar homogeneous refractive appearance.
2. Affected corpuscle expanded and decolorized.	2. The affected corpuscle is usually smaller than the unaffected, and the color is darker than normal.	2. The affected corpuscles are not decolorized, but frequently crumpled and in color resemble old brass (field 10, Fig. 3).
3. Leucocytes do not contain similar blocks of pigment as estivo-autumnal.	3. Leucocytes do not contain similar blocks of pigment as estivo-autumnal.	3. These highly refractive organisms with a solid clump of pigment in the center are always associated with leucocytes containing similar blocks of pigment (field 10, Fig. 5).
4. Pigment reddish brown.	4. Pigment darker than tertian.	4. Pigment granules seen in the parasites of peripheral blood usually in one solid clump.
5. In twenty-nine per cent. of the 542 reported cases there was more than one group of organisms present at the same time.	5. Usually several groups of organisms present at same time.	5. Usually several groups of organisms present at the same time.
6. Phagocytosis may be observed by the polymorphonuclear neutrophiles.	6. Phagocytosis.	6. Phagocytosis.
7. Flagellate bodies may be seen (field 2, Fig. 5).	7. Flagellate bodies.	7. Flagellate bodies.
8. Average duration of paroxysm, from eleven to twelve hours. In twenty-nine per cent. of cases of 542 reported, there was a double tertian infection, giving rise to quotidian paroxysms.	8. Average duration of paroxysm ten to eleven hours. Out of the 5 cases observed of the 542 cases, there was a triple quartan infection in 3 instances, giving rise to quotidian paroxysms.	8. Average duration of paroxysm, twenty to twenty-four hours. Quotidian paroxysms in 39 per cent. of cases; tertian, 6 per cent.; continued fever in 34 per cent.

DURING DECLINE OF THE PAROXYSM, OR AFTER THE COLD STAGE.

Tertian.	Quartan.	Estivo-Autumnal.
1. Fresh, round, hyalin bodies are seen within the red corpuscles, with a depression in the center (field 3, Figs. 1, 2, 3). Similar extracellular hyalin bodies are also seen.	1. Color is somewhat more refractive than tertian type (field 7, Figs. 1, 2). Extracellular hyalin bodies seen (Figs. 5, 6, 7).	1. Hyalin bodies somewhat smaller in size than in the tertian and quartan (field 11, Figs. 1, 2).
2. The ameboid movement is very active, quickly changing to ring-shape, etc.	2. First stage of the growth is same as in tertian, except that the ameboid movement of the organism is slower, less extensive, has a sharper outline, and is more refractive than tertian (field 7, Figs. 1, 2, 3).	2. First stage of growth, same as other varieties, is more refractive than the tertian type, and may have a ring or cross shape (field 11, Fig. 2). Body with cross shape may suddenly expand half over the corpuscle, losing its original shape.
3. Affected corpuscle often larger in size and often decolorized.	3. As the parasite grows, corpuscle not decolorized.	3. Affected corpuscle normal in color until later.
4. Pigment (after a certain time) in small granules of a reddish brown color, and very actively moving, breaking into fragments.	4. Pigment (after a certain time) is in larger clumps, darker in color, and, instead of being very active, is only slightly moving. Fragmentation of pigment slower.	4. Pigment not so large in number as tertian, and is finer than quartan.
5. Full-grown forms undergo segmentation.	5. Some of the full-grown forms do not segment, but undergo certain changes. The pigment, which is seen during paroxysm to be slow in action, will be seen to move rapidly, while the body may expand to a size larger than a red cell. These bodies are very transparent, and closely resemble the analogous forms of the tertian type.	5. Segmentation occurs in spleen.

During Decline of the Paroxysm, or After the Cold Stage.—*Continued.*

Tertian.	Quartan.	Estivo-Autumnal.
6. Besides these forms we see large extracellular pigmented bodies twice the size of red cells. These may often be seen to break up into smaller bodies (segmentation?), while at other times they may show a long, tail-like, non-motile process containing sometimes a few pigment granules (field 3, Fig. 4).	6. Same as tertian (field 7, Fig. 4).	6. Several groups of organisms often present at same time, but we will not see the large extracellular forms observed in the other varieties.
7. The large extracellular forms may become fragmented. A small prominence will be noted upon one side of the body, which rapidly becomes shut off from the larger portion, forming a separate pigmented body. In this manner, one large form may give rise to four or five smaller bodies.	7. The full-grown form (field 7, Fig. 4) may undergo fragmentation.	7. Seen during first week or ten days, etc., (field 12, Fig. 1, 2, 3, 4, 5).
8. Vacuoles may be observed in these large extracellular bodies (field 3, Fig. 5).	8. Vacuoles may be found in these full-grown bodies.	8. Seen during first week or ten days, etc.
9. Flagellæ may be developed from the extracellular bodies.	9. Flagellæ may be developed from these full-grown bodies.	9. Seen during first week or ten days, etc.
10. Flagellate bodies may undergo fragmentation.	10. Same as tertian.	10. Seen during first week or ten days, etc.
11. Phagocytosis.	11. Phagocytosis.	11. Phagocytosis.

Several Hours After the Paroxysm.

Tertian.	Quartan.	Estivo-Autumnal.
1. The organisms which were seen during decline of the paroxysm within the red cells have increased in size and contain a few reddish brown pigment granules, which dance actively under the eye (field 4, Fig. 3). The extracellular bodies seen in decline of paroxysm somewhat larger in size.	1. Organisms slower in growth and are not so large as in tertian type; ameboid movement not so active; rods and clumps of pigment are larger and darker in color than tertian.	1. Organisms somewhat smaller in size than other varieties. Fever often continuous.
2. Corpuscle somewhat larger and decolorized. (Parasite always grows at expense of the corpuscle.)	2. As the parasite grows and the pigment increases in quantity, the red corpuscle does not become decolorized as it does in the tertian variety, but the affected corpuscle may be little smaller and darker in color than its unaffected neighbor (field 8, Figs. 1, 2, 3, 4).	2. Color of corpuscle often shrunken or crenated and darker in color.
3. Pigment granules extremely active and breaking into fragments. Organism very active.	3. Pigment granules less active, darker in color, and in larger clumps than in tertian type. Organism slow in action.	3. Pigment granules not as numerous and active as tertian variety, and are finer and not so dark as quartan.
4. Organism hyalin in color.	4. Organism more refractive than tertian.	4. Parasite hyalin in color.
5. Extracellular bodies may give rise to flagellæ.	5. Flagellæ.	5. Flagellate bodies.
6. Phagocytosis.	6. Phagocytosis.	6. Phagocytosis.

Day Between the Paroxysms.

Tertian.	Quartan.	Estivo-Autumnal.
1. The small hyalin bodies seen in the first stage (during paroxysm and decline of paroxysm) will be found to have grown until they half fill the red corpuscle.	1. The organisms seen in first stages of their growth (during paroxysm and decline of paroxysm) are of slower growth and smaller than tertian type.	1. Several groups of organisms often present at same time, giving rise to continuous fever, with daily paroxysms; and we will then see these organisms in the different stages of their growth. The fever is apt to be persistent. Tertian intermittent paroxysms (three per cent.) may occur by infection of this variety of parasite.
2. Corpuscle larger than normal and decolorized.	2. Corpuscle, instead of being expanded and decolorized, appears smaller than normal, darker—often having a greenish, brassy appearance.	2. Color of corpuscles brassy and crenated if infected by larger forms of parasites; pigment granules lie near the periphery in the larger forms, and we may see ring-shaped bodies, which are the smallest size observed. At end of first week or ten days, if no quinin has been taken, we will see ovoids, crescents, etc. (field 12, Figs. 3, 4, 5).

DAY BETWEEN THE PAROXYSMS.—*Continued.*

Tertian.	Quartan.	Estivo-Autumnal.
3. The organisms are still actively ameboid and the number of reddish brown pigment granules has considerably increased.	3. Index of refraction greater than tertian type, ameboid movement slower in action, and the pigment granules, instead of being reddish brown, are larger and darker in color than tertian.	3. Parasites hyalin in color.
4. Pigment granules reddish brown and very active.	4. Pigment granules darker in color, occur in larger clumps, and not so active as tertian.	4. Pigment granules smaller and fewer in number than other varieties, and the movement of the pigment is very slow.

AFTER FIRST WEEK OR TEN DAYS, OR AFTER TREATMENT WITH QUININ HAS BEGUN.

<table>
<tr><th>Tertian.</th><th>Estivo-Autumnal.</th></tr>
<tr><td>1. The small hyalin bodies quickly disappear after quinin has been given.
2. No round bodies, ovoids, or crescents can be seen. Here are shown poikilocytes observed by author in hemaglobinuria and other varieties of malarial fevers (field 4).</td><td rowspan="3">1. The small hyalin bodies have disappeared. Generally all forms of organisms are gone.
2. Certain characteristics and easily-recognized forms may be seen, however, which are only seen in this type of fever, (field 12). These are round or ovoid bodies about the size of a red corpuscle (slightly smaller or larger), with clear, rather highly refractive, waxy-looking protoplasm, and coarse, dark, pigment granules, which are usually collected in rods forming a ring or mass in the center of the organism. The coarse granules may be slightly motile if separated. In association with these are seen crescentic bodies, the protoplasm of which shows the same characteristics as that in the ovoid forms, while the pigment is collected in the middle in a ring or bunch, and which are only slightly motile. Sometimes the crescentic or ovoid body may be in the middle of the cell. More often the remains of the corpuscle are attached to the concave body of the crescent, while in some cases no remains of the cell can be found. Ovoid bodies have been seen to change into crescents, and crescents into ovoids. Segmentation has never been observed in ovoids or crescents.
3. Ovoids may undergo a gemmation (budding) process.
4. Crescents may be vacuolated.
5. When the round bodies occur, flagellæ may be developed from them, and the pigment is very active.
6. All these forms of estivo-autumnal type are the ones usually found in cases of pernicious malarial fever, chronic malarial cachexia, remittent malarial fever, malarial hemaglobinuria, and obstinate cases of malarial fevers in general.</td></tr>
<tr><th>Quartan.</th></tr>
<tr><td>1. Same as tertian.
....</td></tr>
</table>

two sets of organisms become mature on successive days, and quotidian fever will occur. This happens in thirty per cent. of the cases of tertian infection. Should there be a double infection of the tertian parasite, one may change the quotidian type of fever into a tertian by giving a moderate dose of quinin before or early in the paroxysm. This is made possible by the fact that an entire group of organisms may be killed at the time of their segmentation, while a half grown set of parasites will continue in its course of development.

BIBLIOGRAPHY.

"The Malarial Fevers of Baltimore," by Thayer and Hewetson.

W. Gilman Thompson, "Pepper's American Text-book on the Practice of Medicine," vol. i.

"American Text-book of Diseases of Children," Starr.

Writings of Laveran, Dock, Daland, Canalis, Antolisei, and Marchiafava and Celli.

Von Jaksch, "Clinical Diagnosis."

"Reference Hand-book of Medical Sciences;" supplement.

The Treatment of Infectious Nephritis by Tincture of Cantharides.—MYSZYNSKA (*Revue de Therapeutique*, January 1, 1896,) concludes from a number of observations that the tincture of cantharides is very useful in the treatment of acute epithelial nephritis either with or without edema, especially in young persons at the beginning of the disease. Under these conditions it is a remarkable diuretic, and decreases the amount of albuminuria even if the patient is not placed upon a milk diet. It also improves the appetite and the feelings of the patient. The dose is from 9 to 12 drops. It is contraindicated in interstitial nephritis occurring in alcoholic individuals and in those whose arteries are sclerosed.

Nocturnal Cough Accompanied by Vomiting in Infants.—GASTOU (*La Médecine*, December 26, 1896,) has seen a number of cases of spasmodic cough occurring in young infants in the night time and giving rise to vomiting. Auscultation gave no clue to its origin. Such a cough has often been attributed to a reflex, set up by the intestinal tract, or by some other cause, while a more thorough examination would have shown it to be due to a posterior coryza. It possesses the following characteristics: It is spasmodic, like the whooping-cough associated with vomiting, and occurs at night—almost never in the day. It is seen in young infants who neither blow their nose nor spit. The result is evident. The secretions from the nose, when the infant is lying on its back, drain into the pharyngeal and arytenoid regions and provoke a spasmodic and strangling cough. The treatment is simple. A bit of absorbent cotton is drawn to a point and smeared with borated vaseline and inserted deep into each nostril. The infant sneezes and snuffs and the vaseline penetrates the nasal cavites as far back as the pharynx. If desired, astringent substances, especially antipyrin, may be mixed with the vaseline. This treatment should be carried out three or four times a day.

PLEURISY; ITS DIAGNOSIS AND TREATMENT.[1]

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ALTHOUGH pleurisy is of such common occurrence, especially at certain seasons of the year, and the diagnosis, as well as treatment, is regarded usually as a matter of course, I respectfully call attention to the subject this evening in the hope that a full discussion may elucidate any points that may be exceptional to the general rule. In order to do this properly, however, it may be necessary to go over a certain amount of well-known ground.

Let us look, in the first place, at the classification and varieties of pleurisy. The disease in question may be properly defined as inflammation of the pleura, and of two classes: (1) Pleurisy *without* effusion, also called dry pleurisy, circumscribed pleurisy; and (2) pleurisy *with* effusion.

Each of these classes may be one of three varieties: (1) Acute, (2) subacute, and (3) chronic.

Of dry pleurisy, or pleurisy without effusion, little need be said. It is usually secondary, and in that case is located at the seat of the primary trouble, be it a fractured rib or other surgical injury, or inflammation that has extended to the pleura from the lungs, for instance, as in the course of phthisis. It may, however, be primary or idiopathic, and then, for some reason not clearly known, is situated near one nipple or the other, but more frequently the left. The physical signs are few. On inspection, if there be much pain, we observe a "catch in the breath." Palpation and percussion both yield negative results. Finally, on auscultation, the respiratory murmur is only changed in rhythm, the vocal resonance is unaffected, and as for adventitious sounds, a slight crepitation at most is all that may be expected, and even that is not always present. Such physical signs are what might be expected if we consider the pathological condition. The subserous basement membrane may be thickened at some spot, owing to proliferation of the connective tissue corpuscles, or else, with or without such small spot of thickening, there may be on the serous surface a small amount of fibrinous exudation without serum. This would give the crepitation on auscultation. It would not infrequently terminate in a point of adhesion—a condition often observed on *post-mortem* examination in cases of death from various causes, showing that the patient may have had dry pleurisy during life without even having been aware of that fact.

The *diagnosis* of dry pleurisy is readily made, as a rule. The two affections with which it is most likely to be confounded are pleurodynia and intercostal neuralgia.

Pleurodynia, or muscular rheumatism of the side of the chest (called lumbago, in the back), presents for examination a somewhat diffused area of tender muscles in the side, very painful on pressure or the slightest movement. Lumbago is frequently present or alternates. The rheumatism changes also from one set of muscles to another. In the intercostal neuralgia, the pain follows the line of the affected nerve, and is especially painful where the latter leaves the spinal column, in the middle of its course, and at its anterior extremity, for the reason that the nerve is more superficial at these three points, and consequently more tender on pressure. The pain in dry pleurisy, on the contrary, is limited to one spot that may be covered with the point of one finger, and is not increased by pressure or motion except that of respiration.

Let us now examine the other class of pleurisy, or pleurisy with effusion. The effusion is a sero-fibrinous exudation. The more acute the disease, the more fibrin will there be in proportion to the amount of serum. And, on the contrary, as the disease is chronic, so is the serum greater in amount proportionally to the fibrin. There are three varieties of pleurisy with sero-fibrinous effusion: (1) Acute, (2) subacute, and (3) chronic.

Chronic pleurisy with effusion has usually been classed by authors with empyema or pyothorax, also called suppurative pleurisy, all other varieties being termed acute or subacute. To the author there seems to be no good reason for such an arrangement. It appears to be a much better plan to speak of acute, subacute, and chronic pleurisy with sero-fibrinous effusion, and of empyema or pyothorax under a separate head. Acute and subacute pleurisy with effusion may be considered as of the same nature—that is to say, originating in the same way, as exposure to cold, pleurisy *a frigore*, as it is called, rheumatic pleurisy, and so on.

Chronic pleurisy with effusion, according to my experience, has generally been of tubercular or cancerous origin. Landouzy of Paris, as long ago as 1887, claimed that *all* cases of pleurisy with effusion, however acute, were of tubercular origin, and that there was, in fact, no such disease as pleurisy *a frigore*. While this may be true for the climate of Paris, it is certainly not the case in such cities as London and New York, as amply verified by inquiry on this subject at the Brompton Hospital in London and statements of pathologists in New York.

The truth is that acute and subacute pleurisy in this climate may be not infrequently considered as cases of pleurisy *a frigore*, the difference arising from the condition of the patient at the time of attack. Or sometimes, from improper hygienic surroundings and conditions, and lack of care in general, an acute attack may become subacute. More rarely by far may an acute pleurisy with effusion become chronic. The rule is that chronic pleurisy with sero-fibrinous effusion is a chronic disease when first observed, and usually is of tuberculous origin, sometimes cancerous. According to the late Dr. Bowditch of Boston, the pleurisy is of cancerous origin if the effusion into the pleural sac is bloody, as evidenced by aspiration. My experience in this direction leads me to believe that the statement is generally correct. Of course those cases are exceptional when, through accident or carelessness, an intercostal artery is punctured, or the opposing pleura and lung are wounded and injured sufficiently to give rise to an appreciable amount of hemorrhage.

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[1] Read before the New York County Medical Society, January 25, 1897.

The physical signs of pleurisy with effusion are well known. Suffice it to say that the fluid collected in the pleural sac displaces the lung and acts as a diaphragm or partition to intercept sound, so that over the site of the fluid the vocal fremitus is diminished or absent; so is the respiratory murmur and vocal resonance. Exceptionally, a string of adhesion or rib may telephone or transmit such sounds to some spot with corresponding bronchial breathing and the like. Palpation in this disease is of the greatest importance. The diminution or absence of fremitus, even though bronchial breathing be present, is significant. In cases of doubt, however, the aspirating needle may be tried. The physical signs of acute pleurisy in this first stage are of little import, except the "catch in the breath" observed on inspection and the friction sound heard on auscultation. This friction sound disappears when the effusion takes place in amount sufficient to keep the two pleural layers apart. But in the third stage, after the absorption of fluid has proceeded far enough to allow the two layers to come in contact again, the friction sound returns, or is *frictio redux*. The physical signs of thickened pleura are generally the same as those of pleurisy with effusion, except to a less marked degree.

The *diagnosis* of pleurisy with effusion is usually regarded as very easy to make. That is quite true. But there are some exceptions to which I wish to call your attention. Thus, in a case observed at Bellevue Hospital some years ago, there were all the signs of pleurisy with effusion. There was diminished respiratory expansion on the affected side, absence of fremitus on palpation, marked dulness on percussion, if not flatness, and absence of respiratory murmur. The vocal resonance was also diminished or absent. The case was regarded as one of pleurisy with effusion until *post mortem* examination revealed occlusion of the left primitive bronchus, due to presence of an unobserved aneurism. There was complete obstruction to convection of sound in the left bronchus, thus cutting off the respiratory murmur, fremitus, and the like, giving the same result, but in a different way, as in pleurisy. Meantime the whole left lung became filled with a mucoid fluid, giving rise to the marked dulness on percussion. Walshe mentions a case where enlargement of the heart has been mistaken for pleurisy with effusion.

Enlarged liver or spleen may sometimes be readily mistaken for pleurisy with effusion, but the well-known differential physical signs are generally sufficient for a diagnosis without the aid of the aspirating needle. Sometimes, however, the spleen enlarges upwards instead of downwards, as Niemeyer very properly observes. In some of these cases the needle has to be used to make the diagnosis, as was perfectly illustrated in the case of a young man whom I took for advice to the late Drs. Leaming and Hudson.

In differentiating pleurisy from solidified lung tissue, a subject that presents difficulties in some cases, the curved line of Ellis has been regarded by some as of much importance. That is to say, that the upper surface of the fluid in the pleural sac is not a level, as is the case with fluids in general, but higher at some points than others, and presenting a line of dulness just the reverse of the direction of the interlobar fissure. I must confess that I have never found this curved line of Ellis to be, of itself, of any practical value in making a diagnosis—even admitting that it exists, nor have I ever heard it satisfactorily explained.

The *prognosis* of the disease depends greatly upon whether it is the ordinary acute primary pleurisy, or whether it is secondary to some other disease. In the first case, the prognosis may be said to be very favorable under proper management. The rule is recovery in two or three weeks after the attack commences. When secondary, it depends, of course, on the primary condition, of which the pleurisy is only a symptom or complication.

The *treatment* of acute pleurisy with sero-fibrinous effusion is generally directed first to the pain in the side. How are we to afford relief? Perhaps the simplest way would be to administer an opiate; in fact, if the pain is very severe, this will have to be done. The hypodermic injection of a moderate dose of morphin, to be repeated, if necessary, at proper intervals for the first day or two, may be all that is necessary, since it is only during the first few days that pain is an urgent symptom. In many cases morphin is not required. Dry cups have been highly recommended, but in my experience they are of little service and cause much annoyance to the patient. In case opium is not required, or even in conjunction with it, the question lies between hot and cold applications. Of these, I do not hesitate to recommend the hot-water bag in preference to ice. It affords greater and more speedy relief than ice, and to the patient is much more comfortable. Hot applications, with or without opium, therefore appear to be the best remedies for the pain in the side.

The temperature in pleurisy rarely goes so high as to require interference, but should it be thought advisable to reduce it, a moderate dose of acetanilid or ammonol—say three grains—can be given at noon and repeated at intervals of three hours until bedtime. This is a much better plan than administering quinin, unless a positive malarial condition is present, for, with the exception of controlling temperature in malarial affections, quinin is of little or no benefit, and often does harm by increasing head symptoms, such as delirium, insomnia, deafness, and the like.

Remedies to control the pulse can be given in pleurisy with far less danger of fatally depressing the heart than in pneumonia. For that reason, veratrum viride, aconite, and similar medicines can be used not infrequently with great advantage, whereas in nearly all cases of croupous pneumonia they are, in my opinion, out of the question.

As a rule, in ordinary favorable cases of acute pleurisy with effusion, stimulants are not needed, but the physician would be guided in this as in other diseases, by the character of the pulse, the patient's general condition and previous habits. In ordinary cases, when stimulants are called for, as evidenced by the dry, brown tongue especially, a tablespoonful of whisky or brandy in a little milk every three hours is sufficient; but among those addicted to intemperance a much larger quantity has to be administered. Digitalis, which is so highly recommended and often urgently needed in pneumonia, is seldom required in pleurisy, and the same may be said of nitroglycerin, carbonate of ammonia, and other so-called heart stimulants, the alcohol alone usually being quite sufficient.

Even to this day it is a common practice with the profession at large to apply blisters both in pneumonia and pleurisy. I cannot help disapproving of such practice, however common it may be, in the acute stages of these diseases. In acute pleurisy, blisters would not only do no good during the first two weeks, say, but would do positive harm by interfering with the patient's comfort, and also by increasing the rise of temperature. Should the case become tedious and the effusion remain stationary after the third week in spite of ordinary treatment, then blisters and other counter-irritations, as by means of the tincture of iodin, compound iodin ointment, and the like might be tried, though even here aspiration would be better.

To cause the absorption of the effused liquid in the pleural sac in acute cases, the best remedy I have ever tried is sodium salicylate. It may be given early in the disease, and in the same doses as in acute articular rheumatism. In fact, if we regard the pleural cavity as a large joint, there is no reason why it should not be subject to rheumatic inflammation and effusion, as the knee, for example, in acute rheumatic fever, and in some of these cases the sodium salicylate does certainly act speedily and effectually. On the other hand, I have observed but little benefit derived from the administration of iodid of potassium or such diuretics as acetate of potash with infusion of digitalis, diuretin, and so on. Such remedies do more harm by interfering with digestion and nutrition than any benefit to be derived from their use. But the sodium salicylate should be given with proper precaution. In some cases it so depresses the heart and causes such vertigo that its further use has to be discontinued at once. Also, if such symptoms do not arise so as to contraindicate its further use, it may just as well be discontinued after a few days or a week if such trial proves its action to be of no benefit.

An all-important question arises in the treatment of pleurisy with effusion: Shall we aspirate, and if so, at what stage of the disease, and at what point shall the needle be inserted?

In order to discuss this question properly, let us refer again to the three stages of acute pleurisy with effusion: (1) The dry stage, lasting only a few hours; (2) the stage of effusion, lasting usually from five to eight days; and (3) the stage of absorption, the whole duration being two or three weeks.

Of course, it is generally agreed that if the fluid has accumulated rapidly, as sometimes happens, and is excessive in amount, aspiration should be resorted to at once. Not only is life endangered by asphyxia from interfering with respiration, but if the heart be much compressed, as evidenced by its wide displacement and feeble and irregular beats, the patient may die very suddenly from heart failure. Under such conditions, aspiration alone can save life, and it should not be delayed.

Generally about half the fluid is withdrawn. That is usually sufficient to relieve the urgent distress. Moreover, the cough and pain in the chest caused by the expanding lung will now interfere greatly with further withdrawal of fluid, not to mention the danger of rupture of the lung. In a few days the fluid may have returned, and a second or even a third aspiration may become absolutely necessary. After this, in favorable cases, the exudation of fluid ceases, and what is left in the pleural cavity becomes rapidly absorbed, with complete recovery. But unless such urgent symptoms do present themselves—in other words, if the patient be doing well, are we to withdraw the fluid during the acute stage? Certainly not. The reason for it is obvious. There is a great tendency to the formation of adhesions in pleurisy under the best conditions. To draw off this fluid during the active stage of inflammation, as evidenced in part by the pain and temperature, would simply bring the inflamed surfaces together that had heretofore been kept apart by the effusion. Increased irritation with a more severe grade of inflammation would follow, and, extending into the subserous connective tissue, would convert a superficial into an interstitial exudation and result in a thickened pleura, if not extensive plastic adhesions. Such a termination would be extremely unfortunate, and due to unnecessary if not meddlesome interference. Both lungs would be damaged, the one from imperfect expansion due to such thickening of the pleura and extensive adhesions that hill-climbing or the use of the pneumatic cabinet would fail to break them up; the other from vicarious emphysema, in its effort to do compensatory work. It is to avoid these injuries to the pleuræ, with consequent permanent injury to the organs of respiration, that Potain and other eminent authors so earnestly recommend that, in ordinarily favorable cases, the operation be not resorted to before the second or third week, when all signs of active inflammation have subsided.

It has been recommended that the early withdrawal of the fluid might be practised while injecting sterilized air, thus converting acute pleurisy with effusion into acute pneumothorax; in other words, to substitute sterilized air for fluid as the medium for keeping the two serous inflamed layers apart. The air would become more rapidly and certainly absorbed, while, at the same time, remaining long enough to prevent the injury that would otherwise result from the immediate contact of the inflamed surfaces and sudden expansion of the lung. But, as yet, I have never learned that any practical result for good has been reached by such means. There is no danger whatever, in my opinion, that a sero-fibrinous effusion will be converted into a purulent one by the operation of aspiration if proper precautions, now so well-known to the profession, are observed. But if drawing off the fluid is not good practice, allowing it to remain too long may be said to be equally bad. In this case the period of active inflammation is over, the stage of organizing has arrived, and if the lung be allowed to remain compressed and quiescent, adhesions are almost certain to result.

It is difficult, however, to lay down precise rules for thoracentesis, but Anstie's summary of indications is as good as any, and very convenient. He recommends the operation:

1. In those cases where the fluid fills one pleural cavity and begins to compress the heart and other lung.
2. In all double pleurisies where the total fluid would about fill one pleural cavity.
3. In cases of even a moderate amount of effusion, but attended with paroxysms of orthopnea.
4. In all cases where the fluid is purulent.
5. In those cases where the fluid, occupying at least half of a pleural cavity, has existed for several weeks, and shows no signs of being absorbed.

Though thoracentesis was performed by Troussau of Paris as early as 1830 for evacuating pus from the pleural cavity, to Bowditch of Boston is due the honor (in 1857) of first advocating aspiration in cases of sero-fibrinous effusion. In performing the operation, he preferred the scapular line (Bowditch's line) at a point two inches above the line of the lower border of the healthy lung. One objection to this locality is the accidental plugging of the needle with particles of inflammatory exudation that have settled down at this most dependent point, so that I have been compelled to withdraw the needle and clean it out several times during an operation. For this reason I prefer the axillary line and the fourth interspace on the right side, and the fifth on the left.

In the case of pus in the pleural cavity, a sufficiently large opening should be carefully made at the most dependent point to insure proper drainage; but in case of sero-fibrinous effusion, there is no reason why we should select such a low point, since a sufficient quantity of the fluid may be withdrawn by going higher up. We also avoid the danger of puncturing the diaphragm and going into the abdominal cavity, thereby causing fatal peritonitis. Such an accident could never happen if the operator would only bear in mind the lowest points of attachment of the costal pleural membrane to the chest walls, for they are much higher up than are generally supposed. To avoid unnecessary depth of penetration by the needle and wounding the lung, I invariably use a shield. As soon as the point of the needle is free, showing that fluid has been reached, the shield or guard is slipped down against the chest wall and firmly secured by means of a screw. It is difficult to say just how much fluid is to be withdrawn, but in general about one-half. The operation should cease immediately if there be signs of collapse, as evidenced by feeble pulse, pain across the sternum, and the like.

I have laid a good deal of stress on this subject of thoracentesis, or aspiration, in cases of pleuritic effusion, but no more, in my opinion, than it deserves. The operation itself is so easily performed that it may be almost regarded as insignificant. And yet Potain and other eminent authors of large experience regard it as always to be considered a serious procedure, which should invariably be performed under the necessary precautions. In view of these facts it is difficult to see what grounds there are for much difference of opinion, yet we sometimes find it recommended to draw off all the fluid as soon as the diagnosis is made, while others contend that it is wrong to aspirate before the third week. At present, however, it seems to be customary to perform the operation much earlier than was formerly taught.

In the case of children, the operation is rarely necessary, as the fluid is nearly always absorbed.

Dieulafoix's aspirator is the best instrument to be used, but it costs so much that Potain's aspirator with a bottle attachment is preferred by many. This, however, costs more than there is any necessity for, and, in addition, causes a great deal of continuous pumping to render the bottle a sufficient vacuum for withdrawal of the fluid. For such reasons Potain's fine trocar and canula, with rubber tube attached, simply a siphon, is recommended as one of the best.

For after-treatment, the patient should be sent to a rolling country, where moderate out-door exercise, in addition to hill climbing, will insure full expansion of the crippled lung, thus still farther preventing adhesions, or breaking up those that may have formed. By such means I have known absolute recovery after a very severe attack. The next best plan to hill climbing undoubtedly is the expert use of the pneumatic cabinet. The pulmonary gymnastics afforded by this instrument can hardly be over-estimated. What has been said in regard to acute pleurisy with effusion, applies, with modifications, to the subacute variety. Little or no benefit, however, need be expected in these cases from the use of sodium salicylate; in fact it is generally contra-indicated on account of its depressing influence.

In regard to chronic pleurisy with effusion, the primary disease, of which it is but symptomatic, should be treated. Of these primary diseases, tuberculosis is by far the most frequent.

[For discussion see page 221]

Ohio State Medical Society.—The fifty-second annual convention of this Society will he held in Cleveland, May 19, 20, 21, 1897. The secretary is Thomas Hubbard, M.D., 205 Ontario street, Toledo.

THE AMBULATORY TREATMENT OF FRACTURES OF THE LEG.[1]

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AFTER the discussion in 1894 in Berlin[2] oi the ambulatory treatment of fractures of the lower extremity, a considerable interest in the subject was aroused, and although nothing really new or novel was offered, still it has caused a somewhat more extended use of this method of treatment. The ambulatory treatment of leg-fractures seems to be regarded by some as new, and by others as merely the adoption of views that first found expression some thirty years ago. The method of which I speak in this paper is in use in the Roosevelt Hospital fracture service and, at the time of its introduction by Dr. John McG. Woodbury, was new as regards certain principles, namely, the time when the patient was instructed to walk on the injured limb, and the locomotion of the patient without the aid of crutches; and in speaking of the ambulatory treatment of fractures, I have reference particularly to the large number of cases in the Roosevelt fracture service treated by us where the patient was allowed and encouraged to walk at once, without crutches or supporting braces other than the protective splint directly applied to the injured member.

The splint used in these cases is the plaster cast, so applied as to extend from the toe-tips up to and around the tuberosity of the tibia, so that in walking the greater portion of the weight of the body is supported by the circumference of the upper part of the cast. After reduction of any existing deformity, the limb being held in the proper position, the splint is applied as follows: Beginning at the toe-tips and extending to the knee-joint, the limb is firmly and smoothly bandaged with an ordinary muslin roller. Over this is applied the plaster of Paris cast. No padding with cotton is made use of, the object being to have the splint exert equal pressure at every point, and so provide absolute fixation. In many cases, as soon as the plaster is perfectly hard, the patient may walk, and walk without any other supporting apparatus. As a rule, however, he is instructed to keep his leg in the horizontal position for twenty-four hours, and if at the end of this time the splint is comfortable and there is no tendency of the toes to swell, he is allowed to walk.

In the treatment of any fracture, there are certain important indications to be borne in mind. The surgeon must (1) reduce the deformity; (2) maintain such reduction; (3) fix the fragments and protect the limb, and (4) attend to the general condition of the patient. The last consideration is of especial importance, and I cannot emphasize too strongly the desirability of keeping our fracture cases out of bed. It applies equally well to children, to adults, and to old men and women. I may cite here the case of a man, seventy-two years of age, suffering from a Pott's fracture, who was up and about on the eighth day after the receipt of the injury, and able to walk without the aid of crutches or cane. These statements apply to all fractures, including even compound fractures when observation of a few days has shown us that no infection exists. In the ambulatory treatment of fractures the general condition of the patient is better maintained, less atrophy of the injured limb takes place, and the stiffness of joints in the neighborhood of the fracture is much less pronounced than in those cases which are confined during convalescence. The questions to be decided in considering the advisability of this method of treatment relate to the selection of cases, the form of apparatus to be used, the time when the patient is first permitted to walk on the splint, the duration of treatment, and the advantages gained and risks incurred.

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[1] Read before the Section on General Surgery, New York Academy of Medicine, January 11, 1897.

[2] Verhandlungen der Deutschen Gesellschaft für Chirurgie, xxiii Kongress, 1894.

The Selection of Cases for this form of Treatment.—I have never seen a fracture of the leg which at some time during the healing process was not suitable for the ambulatory splint. There are many cases where the accompanying edema is excessive, and others where there is a considerable effusion of blood. In these cases the surgeon should apply equable pressure throughout, fix the fragments, raise the leg, and keep the patient in a recumbent position until the effusion is absorbed and the swelling disappears. The walking cast is then to be applied, and the patient is allowed to be up and about. It is a great advantage to apply the plaster cast immediately after the receipt of the injury, and thus by the firm, even pressure which it exerts to prevent edema or effusion from occurring. I have never met with an instance of a fracture of the leg in which an immediate application of the plaster cast was followed by bad results. In compound fractures the limb should be made thoroughly aseptic, an aseptic dressing applied, and the fragments fixed. If infection does not occur the ambulatory splint is applied later, and the patient then may begin to walk. When there is an extensive injury to soft parts, the patient must be kept in the recumbent position, with the leg elevated, but in these cases the ambulatory splint should be applied as soon as the condition of the leg warrants it.

The Best Form of Splint for the Ambulatory Treatment of Leg-fractures.—The plaster cast is the only one that has been used in the Roosevelt Hospital fracture service, and the only one, in my opinion, that will make the treatment successful. The ordinary cast varies in thickness from one-eighth to one-quarter of an inch, being thickest about the ankle and at the upper circumference where it grasps the head of the tibia. The plaster of Paris used must be of the best quality. At Roosevelt Hospital use is made of two kinds of plaster bandages, one being the ordinary gauze roller impregnated with plaster of Paris, the other a stiff starch bandage similarly impregnated. A layer of the common plaster bandage is first applied, and this is followed by a layer of the starch-plaster bandage; over this is built the cast with the common plaster of Paris bandages. By thoroughly incorporating these bandages into one mass a cast is made which is fairly light and yet possesses some elasticity, due to the starchy element, and so, while it affords absolute fixation, it is very unlikely to crack or break when the patient walks.

The Time when the Patient Should be Encouraged to Walk with the Splint.—In an uncomplicated case, when an immediate application of the cast has been made, before the occurrence of edema, the patient is usually allowed to rest for twenty-four or forty-eight hours, and then if the toes are not swollen, and the splint is comfortable, he begins to walk. At first his gait will be awkward; he may be nervous and afraid to trust his weight on the plaster cast; but with a cane he will soon learn to balance himself, and in a short time he will require no support except that afforded by the splint.

The Duration of the Treatment.—As regards solid bony unions I am of the opinion that in the great majority of cases no time is gained by this method of treatment. The after-treatment is considerably shortened, however, as the remaining stiffness is less and is more easily relieved. The average length of time the splint has been worn is from twenty-eight to thirty-five days. In a few cases it has been worn for six weeks, the time depending on the amount of callus thrown out, and the completion of consolidation. After the removal of the splint, the leg is douched alternately with hot and cold water several times a day, in conjunction with massage, until all stiffness has disappeared.

Advantages of the Ambulant Method.—I have already mentioned some of the advantages of this form of treatment. Briefly, they consist in the fact that the patient is kept up and about, less muscular atrophy occurs, there is less stiffness of adjacent joints, the period of after-treatment is considerably shortened, and the general health of the patient is maintained. It must also be remembered that the chances of hypostatic pneumonia, occurring in elderly patients, are much less if we keep them active. Quite a number of fractures of the leg have been treated in people addicted to the constant use of alcohol, and I have never seen a case of delirium tremens occur when the ambulant splint was used from the first.

Risks Incurred.—The chief risk is incurred during the application of the cast. To properly apply a cast of this kind requires a skilled operator and a skilled assistant. The importance of skilled assistance and intelligent coöperation is just as great to the surgeon in the reduction of the deformities attendant upon fractures, as it is in the reduction of any other bone or joint deformity. The position of the limb, and skill in holding it during the application of the cast, are most important factors in connection with the success of this procedure. In oblique fractures the splint must be worn until the callus has been absorbed and the fragments have united firmly, so that there is no possibility of the upper fragment becoming displaced later on by the weight of the body.

The accompanying statistical table shows the cases subjected to this method of treatment, from the spring of 1888 to September 15, 1896, in the Roosevelt Hospital fracture service, under the supervision of Dr. Frank Hartley and Dr. John M. Woodbury, in the Post-Graduate Hospital service under the charge of Dr. John M. Woodbury, and in the private practice of the writer.

Taking these seven groups of fractures in the order as shown in the table, Pott's fracture will be considered first. In many cases the deformity is so extreme and typical that a diagnosis is made at sight. In other cases, there is no outward displacement, and very little swelling, and a correct diagnosis is arrived at only after a painstaking examination. The existing deformity is usually corrected easily by flexing the foot to a right angle and making extreme inversion. This position must be maintained until the splint has been applied and the plaster has set. Of the 56 cases of Pott's fracture, the ambulatory splint was applied in 38 instances during the first twenty-four hours; in 18 cases the cast was applied from three to twenty-one days after receipt of the injury.

Fractures of the fibula are of very frequent occurrence. A fracture of the shaft frequently shows little or no displacement, and, as a rule, simply requires the application of the plaster cast. Fractures of the lower end of the fibula frequently show some deformity, and may be accompanied by inward or outward displacement of the foot. A fracture of the lower end of the fibula, accompanied by some outward displacement, but where the internal malleolus is intact, should be regarded as an incomplete Pott's fracture, and calls for the same treatment. Fractures of the lower end of the fibula, with some inward displacement, calls for some eversion as well as flexion to a right angle before application of the plaster cast. Out of 110 fractures of the fibula, 101 were of the external malleolus or at the lower third. In 81 cases, the ambulatory splint was used from the first. In the remaining cases of this group, this treatment was inaugurated from two to twenty-three days from the time of injury, the cases including one compound fracture at the middle third of the bone where the walking splint was applied on the fourteenth day.

Fractures of the tibia are more serious, indicating as they do the receipt of greater violence, and may be accompanied by a considerable degree of shock. Many of the simple fractures do not show much dis-

TABLE SHOWING THE DAY OF APPLICATION OF THE PLASTER CAST.—CASES TREATED FROM THE SPRING OF 1888, TO SEPTEMBER 15, 1896.

Pott's Fractures.		Fibula.						Tibia.				Tibia and Fibula.		Osteoclasis.	Non-union.		Trendelenburg-Hartley	
		Lower 3d.		Mid. 3d.		Upper 3d.		Lower 3d.		Mid. 3d.								
Cases	Day	Cases	Day	Cases	Day	Cases	Day	Cases	Day	Cases	Day	Cases	Day	Cases	Cases	Time.	Cases	Day
38	1	77	1	5	1	1	6	7	1	9	1	6	1	24	1	4th wk	2	14
1	3	3	2	1	2	1	7	1	5	1[1]	5	1	6	..	2	5th "	..	..
2	4	5	3	1[1]	14	..	..	1	10	1	7	2	7	..	1[2]	6th "	..	..
1	5	2	4	..	..	..	..	..	..	1	10	1	9	..	2	7th "	..	..
1	6	4	5	..	..	..	..	..	..	1	11	2	12	..	1	8th "	..	..
6	7	4	7	..	..	..	..	..	..	..	..	2	14	..	1	9th "	..	..
1	8	2	8	..	..	..	..	..	..	..	..	..	..	..	1	10th "	..	..
1	11	3	14	..	..	..	..	..	..	..	..	..	..	..	1	11th "	..	..
3	14	1	23	..	..	..	..	..	..	..	..	..	..	..	1[3]	11thm'h	..	..
2	21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	....	..	..
56		101		7		2		9		13		14		24	11		2	

[1] Compound.

[2] Had been compound.

placement, and, as a rule, are readily put up in a correct position by having a good deal of extension made in the direction of the limb during the application of the cast. In the 22 fractures of the tibia, 9 occurred at the lower third, and 13 at the middle third. Sixteen were treated from the first by this method, and 6 from five to eleven days after receipt of the injury, including one compound fracture on the fifth day.

Fractures of the tibia and fibula require the greatest care in putting them up properly. The surgeon must bear in mind the tendency toward a posterior sagging of the fragments during the application of the cast, and considerable extension must be maintained while this is being done. Of the 14 cases of fracture of both bones, 6 were treated from the first by this method, and 8 from the sixth to the fourteenth day. In fractures of the middle third of both bones, when there is a tendency toward displacement of the fragments, the splint should include the knee-joint and extend well up on the thigh. On the tenth day the bones will be pretty firmly glued together, callus will have been thrown out, and ossification will be under way. The splint is then removed, and if the limb is in good order, the ambulant splint is applied, up to the head of the tibia.

The osteoclasis cases, 24 in number, are here considered because many of them have been most perfect examples of the ambulatory treatment of fractures of both bones about the middle third. They also show the value of the immediate application of the plaster cast, applied as it was without padding, and controlling or preventing the occurrence of edema and effusion. It has been a common sight after the first week to see these little children stand and attempt to walk, and after the first week I always encourage them to do so.

The cases of non-union following fracture, 11 in number, which are presented, were of no little interest, as several of the patients had been confined to bed for a considerable period. Not one case of fracture treated by the ambulatory method ended in this unfortunate way. The ambulant splint was applied to these cases, and the patients were encouraged to walk; if union did not occur within a reasonable time, the fragments were thoroughly needled. This method has been very successful.

Two cases of the Trendelenburg-Hartley operation are here considered, as they show the value of the ambulatory splint in compound fractures. On the tenth day, as a rule, the dressing was removed, the stitches taken out, and a new cast applied, and frequently by the fourteenth day the patient was able to walk very well. This is a very good showing when we bear in mind that a good sized wedge had been removed from the tibia and a linear osteotomy performed on the fibula.

In 226 fractures of the leg, the ambulatory cast was applied during the first twenty-four hours in 159 cases, about seventy per cent. of the total number.

In a letter which I have just received from Dr. Frank Hartley, he says: "I believe thoroughly in the ambulatory treatment of fractures, when we exclude from such cases the fractures complicated by injury to the soft parts—arteries, veins, lymphatics, tendons, etc., or severe laceration of tissues from dislocation of rough, bony fragments or joints, where such injuries demand a more careful and special treatment for their relief than is demanded by the fractured bones, as well as in cases in which, from the obliquity of the fracture, the retention of the fragments in position demands more than the ordinary plaster splint. With these exceptions I fully agree with you in the manner of treatment, and believe that the advantages derived from it are a more rapid and solid union of the fragments, an earlier development of function in the limb including the use of the muscles and the mobility of the joints, and the advantages to be derived to the patient from not being detained at home or in a hospital."

ILLUSTRATIVE CASES UNDER TREATMENT JANUARY 11, 1897.

CASE I.—R. I., aged forty years. Slipped on the ice and fractured external malleolus December 19, 1896. I saw him immediately after the injury, and at once applied the ambulatory cast. He was directed to go home and keep his leg raised during the rest of the day. He reported to me the next morning, and as the leg was in good order and the splint comfortable, he was instructed to walk. He has been up and about since. The cast will be discarded at the end of this week.

CASE II.—F. B., aged six years. December 21, 1896, while coasting on the snow he ran into a cart and fractured the tibia just below the middle third. He was taken to the accident room in the Roosevelt Hospital, and the leg was put up in plaster. He came to me one week later, when the dressing was removed, and as the leg was in good condition, the ambulant splint was applied. He reported to me the next day, and as the conditions were favorable and the splint comfortable, he was instructed to walk. In a few days he not only walked with ease, but rode his velocipede daily.

CASE III.—J. R., aged thirty-two years. On January 3, 1897, he fell a distance of six feet from scaffolding and incurred a Pott's fracture. I saw him the next day, and there was then present some edema, ecchymosis, complete disability, and some outward displacement. The foot was inverted and flexed to a right angle, and the ambulant cast applied. He has been able to walk well since. The cast was changed on the third day on account of the subsidence of edema. He will wear the cast for four weeks from the date of injury.

CLINICAL LECTURE.

SUPPURATING LARYNGEAL BURSA; FOREIGN BODY IN THE NOSE: DEFLECTION OF THE NASAL SEPTUM; HYPERTROPHIC CATARRHAL LARYNGITIS.[1]

BY E. FLETCHER INGALS, M.D.,
OF CHICAGO;
PROFESSOR OF LARYNGOLOGY AND DISEASES OF THE CHEST IN RUSH MEDICAL COLLEGE.

CASE 1.—*Suppurating Laryngeal Bursa.*—This man is thirty years of age. Two days ago he noticed a small hemispherical growth, about an inch in diameter, just above the thyroid cartilage. It caused no inconvenience. Dr. Freer found nothing abnormal upon examination of the larynx with the mirror. He had specific trouble some months ago, but no symptoms remain excepting copper-colored patches on the skin. He says he has been having malarial fever for eight weeks past—an affection that is very rare in this city. Upon being questioned he admits that the fever never left him for three weeks, that he was kept awake nights, that he could not eat, and that he had violent headaches, and was very weak. The fever surely was not malarial. The growth is movable. It is apparently just beneath the skin, lying between the notch of the thyroid and the hyoid bone. It seems to fluctuate slightly on pressure. The only tumor that we are liable to find in this region is caused by an inflamed bursa. I have seen but two or three such cases, and I think no one has been able to give a satisfactory explanation for the growth. Although he has only noticed the growth for a couple of days, it may have been there a much longer time without discovery, as it has caused no discomfort. Introducing an exploring needle I obtain pus. It is yellower than usual, but not very thick. Other cases of this character that I have seen have been slow to heal. In this case we will withdraw the fluid and inject a solution of carbolic acid; at first 5 or 10 per cent. strong, hoping to cause adhesive inflammation. In several cases I have stopped the suppuration of an indolent abscess by injecting lactic acid, 30 to 40 per cent. strong, and have had healing take place without an external wound: therefore, if the carbolic acid does not succeed we will try lactic acid. The question arises whether this abscess resulted from syphilitic inflammation of the thyroid cartilage. As there has been no pain there can hardly have been sufficient inflammation of the thyroid to account for it. We conclude, therefore, that this is a suppurating bursa.

CASE 2.—*Foreign Body in the Nose.*—This three-year-old boy is suffering from pain in, and frequent bleeding from the left nostril. He was adopted only three days ago, and his new mother does not know how long the trouble has been present. Respiratory and heart sounds are normal. The odor is not offensive. Introducing a probe into the naris I find a hard substance, which is apparently a foreign body, about an inch from the nostril. A foreign body in the nose that can absorb moisture usually causes a very disagreeable discharge in a short time, while a hard body may not become offensive. For the removal of foreign bodies from the nose I prefer a snare, as the wire takes up little room and usually passes the object easily. I anesthetize the nostril with a solution of cocain, and with this ordinary polypus snare remove the body without difficulty, it being, as you see, a shoe button. It is well after removing an object from a child's nose to explore the cavity to see if there is anything left, as sometimes several objects have been introduced. In this case I find nothing more. No subsequent treatment will be necessary.

CASE 3.—*Deflection of the Nasal Septum.*—This boy has complained of difficulty in breathing through the right nostril for three years past. There is little discharge, and the mucous membrane looks healthy, but there is a marked deflection of the septum to the right, and considerable hypertrophy of the turbinated body on the left. The etiology of deflection of the septum is not well understood, but traumatism and blowing the nose by holding the thumb on one side are generally given as the cause. This boy could not have caused the trouble by blowing his nose, and he claims never to have had an injury of the part. I think both of these among the least of the causes of deflection. It seems to me that the common cause is hypernutrition, with the resultant growth that would occur from congestion. The septum is held firmly by the nasal and ethmoid bones above and by the superior maxillary below. If it grows too rapidly the result is the same as though the ethmoid and maxilla were approximated to each other; in other words, the septum must bend. As deflection continues, thickening occurs, especially at the lower part, and eventually there will be much thickening, so that exostosis will supersede deflection. It is not pleasant to perform the necessary corrective operation on a boy of ten or twelve years of age under cocain, and it is not worth while to try it under a general anesthetic, but when the patient is older I would recommend running a trephine through the lower part, making an opening about one-eighth of an inch in diameter; and possibly a smaller trephine could be passed through at one or two places a little higher up. This should be done, as far as possible, beneath the mucous membrane, avoiding, if practicable, cutting through into the other cavity. I usually cut out with a knife or saw any redundant portions of the exostosis or enchondroma which remain after passing the trephine once. The septum will thus be so reduced in its vertical width that it may be forced to a perpendicular line. Enough tissue must be removed to destroy its resiliency, in order to get a good result. After the operation, an antiseptic tampon of surgeon's lint which has been saturated with a solution of iodoform and boric acid, and allowed to dry, is packed into the naris so as to hold the septum in proper place. This is removed at the end of four or five days, and then a gutta-percha tube is fitted, which is worn four or five weeks, until the wound is entirely healed.

CASE 4.—*Hypertrophic Catarrhal Laryngitis.*—This man, twenty-eight years of age, has found his voice growing weak during the last three years, and he is now aphonic. There is no soreness of the throat, and he is otherwise in perfect health. There is nothing in his history or in the symptoms that would account for aphonia. On laryngoscopic examination I find the vocal cords a good deal thickened. The arytenoids are irregular and thickened, the left enlarged a little more than the right. It is a case of chronic inflammation involving the whole upper part of the larynx. This might result from simple catarrhal laryngitis, or from specific, tubercular, or malignant disease. He claims to have had no specific disease, and there is nothing in the history or former symptoms, or in present appearances, pointing to syphilis. In tubercular laryngitis there is generally less redness than in this case, but usually more swelling, and it is commonly attended by great pain and marked constitutional symptoms. In malignant disease the tumor begins at one point, gradually extends, and for a long time remains unilateral. This, then, must be one of those unusual cases of thickening of the larynx resulting from chronic catarrhal laryngitis. I have seen but two or three such cases during the last twenty-five years. Comparatively strong astringent applications long continued are most likely to benefit this patient. They should be applied every day or two, and should be strong enough to cause discomfort for half an hour to an hour. I shall also order for him moderate doses of iodid of potassium (seven and a half grains after each meal), to be taken possibly for weeks or months, but this is not given with a view to any specific effect.

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[1] A Clinical Lecture delivered at Rush Medical College, Chicago.

MEDICAL PROGRESS.

The Physical Signs of Pleural Effusions.—In an interesting lecture dealing with the physical signs of pleural effusions, PITRES (*Archives Cliniques de Bordeaux*, 1896, p. 241) points out that displacement of the heart is an habitual symptom of moderate or abundant pleuritic effusions, although it is not observed in adults when the amount of fluid is less than a quart. It occurs when the fluid equals from two to three quarts, and is more pronounced when this is four or five quarts. When the effusion is right-sided the heart is displaced *en masse*, without notable change in its axes, from between two and two and a half inches downward and to the left, so that the apex-beat appears in the fifth or sixth intercostal space outside the left mammillary line. When a moderate effusion occupies the left pleural cavity, the heart tends to assume a vertical position. If the effusion is greater, the heart, retaining its vertical position, is carried *en masse* beyond the right margin of the sternum and is firmly compressed against the anterior wall of the chest. The apex-beat is then visible over several intercostal spaces in a curved line passing from the second or third right chondro-costal articulation to the epigastrium, and reaching to the level of the right nipple, or above. The pulsation in the left mammillary region is, however, due to the aorta and not to the apex, for the heart is not inverted in any case so as to assume an obliquity from left to right with its apex beneath the right nipple. The displacement of the heart as a result of pleural effusions is limited by the tension of the pericardium, whose fibers, firmly attached above to the apex of the chest and below to the central tendon of the diaphragm, submit to a degree of traction corresponding to the depression of the diaphragm caused by the weight of the effusion; in proportion as the diaphragm is depressed the median septum of the mediastinum is made tense. Pleurisy with abundant effusion being always unilateral, it follows that the pericardium tends to the side on which the diaphragm is depressed. If the effusion occupy the right pleural cavity, the right half of the diaphragm is made tense, and the right or auricular portion of the pericardium sustains the traction, and as this portion is normally directed almost vertically, the heart is relatively little displaced to the left. If the effusion occupy the left pleural cavity, the left or ventricular portion of the pericardium tends to become vertical, and as this is normally oblique, the change causes the heart to be displaced toward the right. In both cases the heart is protected from the effects of an exaggeration of the intrathoracic pressure existing within the pleural cavity, distended by fluid. It is by virtue of this protection that the heart continues to beat. Without it the auricles would be restrained and the circulation be interrupted. The cardiovascular accidents and the sudden death which sometimes follow in the course of pleurisy and which have been attributed to displacement of the heart depend really upon multiple and varied causes, but they are not related as cause and effect to the degree of displacement of the heart, for they may occur when the heart is but little if at all displaced, and they may not occur when considerable displacement of the heart exists.

The Treatment of Profound Anemia Due to Puerperal Hemorrhage by Intravenous Injections of Artificial Serum.—MAYGRIER (*L'Obstetrique*, 1896, No. 4, p. 289) has reported an exceedingly interesting case illustrating the life-saving utility of large intravenous injections of artificial serum in the treatment of profound anemia following puerperal hemorrhage. A woman, twenty-four years old, in the eighth month of her third pregnancy, suffered a slight uterine hemorrhage, which was repeated two days afterward. Nine days later, following a long walk, a more copious bleeding ensued and this recurred a number of times in the course of the next few days, until the woman was greatly enfeebled and prostrated. When she came under observation the fetus was found to be dead, with its head occupying the left iliac fossa. The woman was now pale and cold, her pulse rapid and feeble, and the general condition so bad that further examination was desisted from until artificial heat had been applied, stimulants administered, a hypodermic injection of ether given, and ten ounces of artificial serum (consisting of five parts of sodium chlorid and ten of sodium sulphate to one thousand of water) introduced into the subcutaneous tissues. The right shoulder of the fetus was now found presenting on the left side of the mother's pelvis, while the cervix uteri was soft and dilatable. The membranes were ruptured and a foot drawn into the vagina. Further interference had to be suspended owing to the condition of the patient, whose color had assumed a cadaveric aspect, with cyanosis of the lips and a scarcely perceptible pulse. Despite subcutaneous injections of ether, continued applications of heat and inhalations of oxygen, the state of affairs grew worse and death seemed imminent. It was now decided to employ intravenous injections of artificial serum, and two quarts were at once introduced into the left median cephalic vein. The effect was immediate and gratifying. The pulse became appreciable and regular, respiration was resumed with regularity, the face lost its lividity and assumed a pinkish hue and the lips became red. Consciousness returned and the patient expressed her sense of improvement. Forty-five minutes after the injection the amelioration began to recede and in a short time the fetus was expelled. The condition of the woman now grew even worse than it had been before, and a second injection of two quarts of artificial serum was made into the right basilic vein. Again the improvement was remarkable and now the placenta was expelled, together with a large quantity of clotted and liquid blood. This hemorrhage was controlled by an intrauterine injection of hot water, but was sufficient to render the condition of the patient once more precarious. Throughout the night inhalations of oxygen were kept up. A third injection, also of two quarts of fluid, became necessary, with the same happy effects as before. The patient was soon able to sleep and was in every way greatly improved. A slight elevation of temperature necessitated curetting of the uterus, which resulted in the removal of considerable fetid *débris* and the loss of some six ounces of blood. There were no further complications and the case proceeded to permanent recovery.

Application of X-rays to Anatomical Study.—REMY and CONTREMOULIN (*La Semaine Médicale*, 1896, p. 447), by the use of metallic powders in suspension in liquids used as injecting fluids, have shown that the distribution of the vessels can be studied and photographed with extreme accuracy. In the hand and forearm the small arterioles are easily seen, and the large veins can be traced throughout their extent.

THERAPEUTIC NOTES.

A Practical Method of Humanizing Cow's Milk.—The happy results which have followed the use of cow's milk which has been modified so as to conform closely to mother's milk have induced DUFOUR (*Rev. Men. des Malad. de l'Enfance*, September, 1896,) to seek out a practical method for the humanizing of cow's milk in any family. As is well known, cow's milk differs from mother's milk in containing an excess of proteids and salts, while it is deficient in sugar. The amount of fat in the two is essentially equal.

Dufour takes a large graduate which contains about two liters and has at the bottom a spout closed by a cork. Into this he pours the quantity of milk suitable for an infant of the required age for one day. The vessel is tightly covered and set away in some place which is cool in summer but moderately warm in winter. After about four hours the cream will have risen. Through the spout at the bottom one-third of the milk is now drawn off, a quantity of water is added equal to the milk which has been withdrawn, and 35 grams of milk sugar and 1 gram of salt per liter. The whole is mixed by shaking and poured into sterilized bottles. If the infant does not gain weight as fast as it ought, one to two spoonfuls of fresh cream should be added to the day's allowance of milk.

Absorption of Iron in the Intestine.—HOCHHAUS and QUINCKE (*Arch. f. experim. Pathol. u. Pharmakol.* 1897, vol. 37, p. 156) carried on numerous experiments in order to ascertain in what portion of the intestine iron was absorbed. The iron was administered in various forms, both organic and inorganic. The results showed positive absorption in all cases. This took place especially in the duodenum, whose epithelial cells were found to contain fine grains of sulphid of iron. These disappeared if no iron was given for some days. In the stomach and small intestine traces of iron were found only occasionally. In the cecum and the large intestine iron was found in smaller quantities, and in the opinion of the investigators iron is discharged from the economy through these tracts.

Spermatorrhea of Neurasthenics.—This symptom, insignificant in itself, but which occupies an important place in the thoughts of those neurasthenics in whom it is present, has been studied by ST. GOLDSPIEGEL (*Revue de Therap.*, January 1, 1896.). Spermatorrhea is to be attributed to an exaggerated irritability which is often hereditary. It is best treated by electricity, the positive pole being placed over the lumbar cord and the negative pole on the spermatic cord, the penis and the perineum. An application should last two or three minutes, and is to be repeated from four to six times a week during ten weeks. Static electricity may also be applied. Hydrotherapy and bromid of potassium have also given good results.

Dyspepsia Accompanied by Acne.—MITOUR (*Revue de Therap.*, December 15, 1896,) recommends for cases of dyspepsia accompanied by acne, light meals, frequently repeated. The food should be well chewed and of an easily digested character. Bread, spiced meats, preserved fish, pastry, butter, and fatty foods should be avoided. Alcohol and milk are also injurious. Water is the best drink and should be taken sparingly with meals. Medicinal treatment is three-fold; (*a*) to stimulate the secretion of hydrochloric acid there should be given before meals bicarbonate of soda with sulphate of soda and potash in small doses, or ipecac, or condurango; (*b*) to stimulate the muscular action of the stomach the tincture of nux vomica may be given after meals; (*c*) to prevent fermentation naphthol, benzol, beta-naphthol, or salicylate of bismuth are indicated. For constipation with intestinal inflation sulphate of soda and calomel are recommended. In certain cases hydrotherapy, abdominal massage, gastric lavage and electricity have given excellent results.

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PLEURISY.

THIS is one of the most frequent of the milder diseases that afflict the human race and is likewise a most distressing malady. In the management of it the resources of the attendant are more especially invoked in the department of those duties which are directed to promptness in restoring his patient to health and in making him comfortable during this process. The subject is handled so concisely and yet so completely and satisfactorily in the article which we publish this week and in the discussion which follows, that we cannot resist calling the special attention of our readers to it. It is valuable; it is practical.

THE CHAMBER OF EMULATION.

JEAN LOUIS PETIT was not more famous as a surgeon than as a teacher. The fame of the Paris School of Medicine, in the last century, was largely due to his personal power as a teacher, and his skill as an organizer. During the period of his incumbency of the position of dean of that school, an event occurred which conveys a lesson that the teachers in our medical colleges would do well to heed. It appears that at one time the professors became very lax in the performance of their duties. They arrived late at the college, the lectures were rapidly delivered, and were the same that had often been heard before. On the conclusion of the lecture the individual professor hastily left the college, and no student had an opportunity to ask a question which would solve a doubt or aid him in his course of study. The students finally became disgusted with the farce and adopted the very sensible resolution that they would no longer attend lectures, but would teach themselves. Accordingly they notified the dean that they would no longer waste their time in the lecture-room, and thereupon they organized a society called the Chamber of Emulation. The plan of instruction devised was that of mutual aid, the senior student especially acting as teachers.

The success of the movement was so great as to alarm the faculty, and Petit undertook to counteract the new departure. At first he endeavored to win the students back by giving fanciful lectures on attractive subjects, as surgical instruments, exhibiting them and explaining their uses and comparative merits. This effort having signally failed, he adopted a method of teaching not unlike that which proved so popular in the Chamber of Emulation. He announced that, instead of giving formal lectures as before, he would propose questions for discussion and the students should have the greatest freedom in debating with him, being allowed to ask and answer questions freely. This proposition was received with great favor, and the students returned to the lecture-room and to their allegiance to the professor. They were only too willing to give up their own organization when the professor consented to take the place of the senior student and both question and be questioned.

This episode in the history of the Paris School of Medicine strikingly illustrates the defects in our system of medical instruction as viewed from the student's standpoint. To him the lecture-room has few attractions when he is studying the technical branches as anatomy, physiology, chemistry, and the principles of medicine, surgery, and obstetrics. And even in studying the practical branches he labors under great disadvantages when the instruction is given only by formal lectures. If he is a graduate of a literary institution he notices a vast difference between the literary and medical colleges in the method of teaching purely technical branches. He learned his Latin, Greek, and mathematics in the class-room of the tutor or professor by questions and answers, but he is now to learn his anatomy, physiology, and chemistry, by listening to a lecturer with whom he rarely if ever exchanges a word. These lectures are by no means always instructive. Too often, as in the Paris School, they are not prepared for the occasion, but are delivered in a perfunctory manner. At the close of his lecture the professor usually hastens from the school as if fearful of having a question asked him.

It is not surprising that in the medical schools which adhere to the old system of instruction in the technical branches by formal lectures, the earnest student finds little positive aid in the discourses which, though often entertaining, are too frequently uninstructive. He soon discovers that he can learn anatomy, chemistry, and physiology, only by close application to text-books, by work in the dissecting room and laboratories, and by the personal instruction which he obtains in the examination room of a competent teacher. To secure this kind of assistance the student is compelled either to employ a private medical teacher and thus pay a large second tuition fee, or he associates himself with other students for mutual improvement by discusssons and examinations, thus creating a "Chamber of Emulation." When he is provided with these aids to study he attends the lectures only for pastime or amusement, or to comply with the rules of the school. At the close of the term he is certified to have attended a full course of lectures. Thus, in due time, he complies with the letter of the rules for graduation and appears before the faculty for examination. No member of the teaching body knows him personally, and he is recognized only by those who recall a face which they have somewhere and at some time seen. He proves to be a remarkably apt scholar in every branch, and even answers the usual "catch" questions by each professor, having been properly "coached" by his preceptor. He receives his diploma and departs and ever holds in grateful remembrance the young teacher, outside the college walls, to whom he is indebted for his medical education.

We commend to the thoughtful consideration of the faculties of our medical schools the incident in the Paris school and the lesson which it enforced upon Petit and his colleagues. The same question which they raised is on the lips of hundreds of students to-day who are beginning their course of study. In their own private circles they ask: Why should not all branches of the medical sciences be taught by personal contact of the student with the living teacher as in the academic course? Why should not a sufficient number of teachers be employed so that the class may be divided into small sections which would bring the teacher into daily personal relations with each student that he would learn his mental traits, his habits of study, the peculiarities of his modes of thought, and thus be able to aid him promptly in all his difficulties by explanations, illustrations, or demonstrations? It is admitted by every practical teacher that this is the true method of teaching any technical branch of science, and our schools can not much longer delay adopting the scheme and making ample provision for enforcing it.

SURGERY OF THE LUNG.

In the year 1710, nearly two centuries ago, Baglivus suggested that cavities in the lung might be successfully treated by operation. During the next century and a half, an occasional operation was performed for the relief of pulmonary affections, but the surgery of the lung was unsystematic and largely experimental until Graux in 1850 reported the results of thirteen operations. All these cases were, however, unsuccessful, and these results combined with other similar failures retarded the progress of pulmonary surgery for another quarter of a century.

A fresh impulse was given to this branch of surgery some fifteen or twenty years ago when numerous successful experiments on animals, where portions of the lung, and even entire lobes, were excised, led to the hope that the same success might follow operations on the human lung. This expectation, however, has not been fully realized. Especially is this true in regard to tubercular processes which would offer a vast field for operative interference were success to follow such treatment. In this class of cases there seems to be but little hope of benefit to be derived from excision of tubercular foci. Reclus, in a most admirable address which he delivered before the French Surgical Congress in 1895, said, "Resection of the lung for tubercular disease seems to me condemned past appeal." This judgment may be somewhat too severe and yet it probably expresses the view of most conservative surgeons on this subject.

The results of simple incision into tubercular cavities have been somewhat more favorable. A number of patients have been benefited by this procedure, and in certain cases this operation seems indicated. A successful termination must be exceptional, however, as the original focus of disease must still remain, and probably other foci also. Reclus reports eight such operations upon an equal number of patients, only two of whom died, while five were improved or cured. He states, however, that all were carefully selected cases. Laufert and Worth have calculated that out of 100 such cases, 5 die at once as the result of operation, 10 die within a fortnight, 15 more inside of a month, 10 are improved, and zero represents the number of recoveries. Paget reports 24 operations, with 9 deaths, 5 recoveries, and 5 improvements.

Operation for pyopneumothorax, as the result of tubercular ulceration, has been performed in a number of patients, in two of whom the opening was successfully closed by suture. The difficulty however of locating the perforation must be great, and at best temporary relief only can be afforded.

The results of operation for growths in the lung are equally disappointing. When carcinoma or sarcoma occurs primarily the growth is in all probability so extensive before the diagnosis can be made that extirpation is impossible. In some cases where the malignant tumor has extended to the pleura and lung from the chest it is possible that extirpation might be successfully accomplished.

In abscess, gangrene, and hydatid cysts, sufficient experience has accumulated to enable us to judge approximately of the risks of operation and of the chances of recovery. The results are becoming more and more favorable and undoubtedly will be still more encouraging as soon as physicians can be convinced that operation is not attended with great risk and that it offers a fair chance for recovery.

The results of operation for pulmonary abscess are certainly full of promise. Thus Fabricant reports 38 cases, with 29 recoveries, and 9 deaths. Reclus reports, out of 23 operations which have been performed within the past ten years, 20 cures and 3 deaths. The old idea that adhesions between the lung and parietal pleura were a requisite for successful operation is happily passing into oblivion. Adhesions are unquestionably of great advantage. When they exist the danger of infecting the pleural-cavity and thus exciting a pyopneumothorax is very slight and the incision into the abscess cavity is a comparatively simple operation. Many successful operations have been performed however where there are no such adhesions, as for example the cases recently reported by Smith and Frederick Treves in the *Lancet*, and by Northrup in the *N. Y. Medical Journal*. If adhesions are absent the operations can be carried out in two stages, at the first, suturing the two pleural layers; at the second, opening the abscess after a delay of a few days. Unfortunately, however, such delay is generally inadmissible. It means death. The abscess must be opened at once. In certain cases the parietal pleura may be sutured to the lung, but generally the patient's condition is such that the operation must be rapidly completed, the pleural cavity being protected as well as possible by sponges and gauze.

In gangrene the mortality without operation is about eighty per cent. In certain cases of diffuse gangrene operation is out of the question, and the case is hopeless. In circumscribed gangrene operation offers to the patient a fair chance of recovery. Excepting a few cases of gangrene occurring in young subjects where the patch is small and near the apex, it is a question whether operation should not be advised as soon as the diagnosis is made in every case of circumscribed gangrene where the general state of the patient or some intercurrent disease does not render all treatment hopeless. As in abscess so in gangrene; the operation, if otherwise indicated, should be performed, adhesions or no adhesions.

Another reason for delay which is sometimes advocated is that operation is not indicated until after the stage of consolidation has passed and deliquescence begun. The latter stage however is generally reached before the diagnosis has been made. Of course the patient may recover without operation, but the dangers of sepsis or the conversion of a circumscribed into a diffuse gangrene more than counterbalances the risk of an operation. These risks are not very great, as may be judged from the statistics of Heydweiller who collected 40 cases treated by operation prior to 1892, with 22 recoveries, 4 improvements, and 14 deaths. The more recent cases of Reclus number 14 operations, 11 of the patients being cured, 1 being improved, and only 2 having died.

In cases of bronchiectasis the results of operation seem to be less hopeful. More than one cavity generally is present. One may be incised and healed but others are left. Reclus reports 12 operations, 8 of which terminated fatally, 4 of the patients being improved, but none cured. Paget reports 5 cases all of whom were improved, but he adds that all were exceptional cases. The conclusion of Truc seems correct: "When the cavity in the lung is the essential lesion, when the symptoms of septic absorbtion dominate the scene, when there is high fever and the patient is shaken by cough and exhausted by profuse expectoration, then without raising vain hopes and simply to alleviate suffering we may have recourse to incision of the lung. Now and again a marked improvement has been noted."

The results of operation for hydatid cysts have been most satisfactory, indeed more so than for any other pulmonary affection. Paget has collected 45 cases thus treated, 37 of the patients being cured, and 6 having died. In this condition operative interference is always indicated.

Andrew J. McCosh, M.D.

ECHOES AND NEWS.

Vacant Professorships in Philadelphia.—The chairs of anatomy, clinical surgery, and genito-urinary surgery are vacant at the Medico-Chirurgical College at Philadelphia. Only the chair of anatomy is salaried. All applications should be addressed to Isaac Ott, Dean.

Control of Tuberculosis in Rome, Italy.—We learn by letter of Dr. McDonald, in the *Boston Med. and Surg. Journal*, that tuberculosis is ranked by the Board of Health of Rome among contagious diseases, and prompt notification of all cases is required. Indeed, almost the identical system of management recently promulgated by the New York Board of Health is in thorough active operation there.

The Davy-Faraday Research Laboratory.—The opening of this public laboratory in London will doubtless mark an epoch in chemical science in Great Britain. It was established by Dr. Ludwig Mond, at a cost of $500,000. Of this, $170,000 was expended in the building and its equipment, and $330,000 invested as an endowment. It is open to persons of either sex and any nationality, who can satisfy the Laboratory Committee that they are qualified to undertake original scientific research in pure or physical chemistry.

A Confusion of Names.—We are informed that some confusion has arisen at Carlsbad (Bohemia) because patients who are accredited merely to "Dr. Kraus" find, on arriving, three Drs. Kraus in active practice, viz.: Dr. J. Kraus, Sr., Dr. Frederick Kraus, and Dr. Oscar Kraus. Dr. J. Kraus, Sr., is no doubt, the physician usually meant, he having been associated with Carlsbad so many years, but whether he be or not, it is evident that confusion can only be avoided by correspondents using the full name of the Dr. Kraus intended.

The Tennessee Centennial Exposition.—The Centennial and International Exposition to celebrate the one hundredth year of Statehood by the citizens of Tennessee will be held in Nashville, and the opening day is fixed for Saturday, May 1, prox. Already the sum of over $500,000 has been subscribed by the citizens of the State, and an additional $130,000 has been appropriated by Congress for a special Government exhibit. A separate and special building for medical and surgical appliances and hygiene will be provided for everything pertaining to these sciences and arts.

The British Army in India Incapacitated by Sexual Disease.—It is reported that out of 73,000 British soldiers now in India only 24,000 are free from a special disease in a more or less severe form. One-half of the whole army is incapacitated for prolonged marching service. Preventive measures against these diseases proved very effective among the Indian forces when medical inspection of the cantonments women was practised. Medical regulation of army prostitutes was abolished some years ago through the influence of the English religious organizations. An appeal has been made to the home government by the Viceroy's Council to reëstablish the former custom.

English View of the Plague in India.—Now that the English people have contributed generously to the relief of the famine-stricken, plague-infested fellow-subjects of the Queen-Empress in India, and thus avoided a possible charge of endeavoring to shirk a duty of charity, they have made the situation the occasion for discussion of that pitiless topic, "the survival of the fittest." The public press is endeavoring to answer the following questions: What part do these periodic famines and great epidemics play in the economy of nature? Are they, everything considered, the unmitigated evil which they appear to be? Was Darwin right or wrong in making these great fatal visitations the basis of his theory of natural selection?

Electricity as a Measure of Temperature.—Prof. Dewar announced before the Royal Institution of London January 22 the results of some recent experiments with liquid oxygen and other low temperature investigations. He explained that the temperature of liquid oxygen is constant at 182° centigrade below zero [295°.6 F. below zero]. This scientist has discovered in electricity a means of measuring such extraordinary degrees of cold. As he explains it there is an electric balance, for instance, between a temperature 100° above freezing and 100° below freezing. The temperature of liquid oxygen is determined by immersing one thermo-electric junction in a substance which is boiling at a known temperature of 182° C. above zero, and another in liquid oxygen itself. The two currents which are produced exactly balance each other.

Dinner of the Long Island Medical Society.—The sixth annual dinner of this society took place at the Montauk Club, Brooklyn, Tuesday evening, February 2d, and proved to be one of the most successful affairs of the kind that the society has yet given. Dr. W. H. Clowminzer, president of the Society, acted as toast-master. "The Long Island Medical Society" was responded to by Dr. Henry T. Hotchkiss, the vice-president, and "The Future of the Society" by Dr. John O. Polak. In response to the toast, "Medical Politics," Dr. Arthur C. Brush, a member of the State legislature, made a speech which was listened to with intense interest by the Society, and his remarks were heartily endorsed by subsequent speakers. Dr. Philip T. Brennan spoke on "Dangers Threatening Our Profession," and Dr. S. J. McNamara on "Any Old Thing." Other interesting remarks were made by Dr. R. J. Morrison, Dr. J. M. Clayland, Dr. A. S. Treadwell, Dr. W. E. Butler, and others.

The Sale of Patent or Proprietary Medicines in New York.—A bill has been introduced in the New York Legislature declaring that no drug, medicine or mixture of drugs, herbs or medicines, commonly known as patent or proprietary medicine, shall be sold, offered or exposed for sale in this State, unless an analysis or formula of the contents thereof has been filed in the office of the State Board of Health, and a certificate issued by such Board that according to the ingredients thereof, as indicated by such analysis or formula, the sale and use of such patent or proprietary medicine for the purpose for which the same is advertised or the purchase thereof solicited will not be dangerous to the public health. Every such analysis or formula filed in the office of the State Board of Health shall be preserved as a record of such board, but shall not be open to public inspection, nor shall the contents thereof be revealed by any member of such board, officer, agent or employe thereof, except for the purpose of a criminal prosecution as provided by this act.

CORRESPONDENCE.

THE OPTICIAN'S BILL BEFORE THE LEGISLATURE.

To the Editor of The Medical News.

Dear Sir: A bill has been introduced in the legislature known as Assembly Bill No. 459, entitled "An Act to regulate the Practice of Optometry in the State of New York," which decrees that the Regents shall appoint a Board of Examiners to examine any person who desires to treat any condition of the eyes requiring glasses, and grant a certificate of proficiency which must be hung in a conspicuous place in the office of the recipient. The opticians who call themselves refracting opticians are behind this measure and contend that the refraction of the eye is no part of medicine, and that physicians have no right to take unto themselves the exclusive privilege of this department.

Every physician must be fully aware of the evil consequences that will of necessity follow the passage of a measure of this kind, as the examination requires simply a knowledge of optics, and is one which any person can prepare himself for in a very short time. The sponsors of this measure claim that they need protection; that they have been fitting glasses for a long time, and that they have a right to continue to do so. In answer we say, that the time was, and not so long ago, when the pulling of teeth, blood-letting, and many of the present functions of the physician or those having a medical education, were in the hands of the barbers; but increasing education has demonstrated that in order to protect the public, medical privileges, of which the fitting of glasses is one, can be safely entrusted only to those, who, by careful medical training, are capable of discriminating between health and disease.

The present standard of medical education is higher in the State of New York than anywhere in the United States, and we urge the members of the profession to keep it so. If every physician who reads this statement will write to his or her representatives in the Senate and Assembly, protesting against the passage of Assembly Bill No. 459 in any form which obviates a medical education as something which would be extremely dangerous to the public, the defeat of this measure is assured.

The Committee on Legislation will be happy to furnish names of representatives, or any desired information.

Signed,
D. B. St. John Roosa,
Egbert H. Grandin,
Charles E. Nammack,
William R. Pryor,
Frank Van Fleet, Chairman.

New York,
February 8, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

MEETING OF THE COLLEGE OF PHYSICIANS—DISCUSSION OF THE RELATION OF NERVOUS DISORDERS IN WOMEN TO PELVIC DISEASE, BY DRS. HIRST, MONTGOMERY, WEIR MITCHELL, MILLS, DERCUM, SINKLER, ANDERS, SOLIS-COHEN, AND OTHERS—MEMOIR OF DR. WILLIAM HUNT.

February 6, 1897.

At a stated meeting of the College of Physicians, held on February 4th, Dr. Thomas G. Morton read a memoir of Dr. William Hunt. Letters quoted by Dr. Morton from Oliver Wendell Holmes to Dr. Hunt, who attended Dr. Holmes' son while suffering from wounds received in the war of the Rebellion, as well as the correspondence between Dr. D. Hayes Agnew and Dr. Hunt in regard to the latter's defense of the methods of the American surgeons in their treatment of President Garfield against the attacks made by Esmarch and other continental authorities, rendered the memorial peculiarly interesting.

The main business of the meeting—the discussion of the "Relation of Nervous Disorders in Women to Pelvic Disease"—was opened by Dr. Barton C. Hirst, who quoted cases disproving the fallacy of always regarding pelvic disease as a causal factor in such disordered states as hysteria, hystero-epilepsy, and the like. In a number of patients coming under his notice, in whom a diagnosis of uterine or ovarian disease had been made to account for the nervous condition, examination had shown the uterus and appendages to be, in some of the cases, absolutely normal, and in others rudimentary. Moreover, sustaining and developmental treatment, addressed to the mind and body, without reference to the possibility of pelvic disorder, had, in the vast majority of cases, proved successful. Dr. E. E. Montgomery, continuing the discussion from the gynecologist's standpoint, said that while deprecating the indiscriminate ablation of the ovaries or uterus, there were cases of actual disease of these organs augmenting or exciting a mental or nervous disorder which their removal would greatly ameliorate. The views of Drs. Shoemaker and Noble practically coincided with those already expressed.

Dr. S. Weir Mitchell said that severe shock of almost any kind had, in his experience, been as beneficial in temporarily improving the mental and nervous condition of such states as those under consideration as had ever ovariotomy or kindred operations. He had never seen a case of epilepsy benefited by operation of this kind, and premature stoppage of the menstrual function had singularly failed as a curative measure in hysterical and mental disorders.

Dr. F. X. Dercum argued that if such trivial lesions as a slight perineal tear and inflammation of the ovaries were responsible for such conditions as hysteria, hystero-epilepsy, etc., much more marked should be the nervous symptoms caused by malignant disease of the genital tract. In cancer of the uterus, however, nervous symptoms such as those under discussion were rarely, if ever, met. Of the so-called hysterical stigmata, he mentioned ovarian tenderness, but to condemn the name, and to substitute inguinal tenderness as a better term. This tenderness he believed to be superficially located in the abdominal wall. For, by fixing the point of most exquisite pain externally with the index finger of the right hand and, *per vaginam*, bringing the same finger of the left hand directly beneath this locality, the two could be approximated, the one directly over the other, with only the thickness of the abdominal parietes intervening. Pressure now at this point produces symptoms identical in every respect with those consequent upon so-called ovarian pressure.

Dr. C. K. Mills believed hysterics, hystero-epilepsy, and insanity to be somatic conditions, whose origin was entirely independent of pelvic disease. Therefore he could not see how the removal of any pelvic organ or disease could have a *curative* effect on these conditions. Yet, if any of these viscera were diseased, their remedy should constitute an integral part of the rational and successful treatment, for by so doing the factor most concerned in augmenting the nervous condition might possibly be eliminated. Speaking of the benefit to be derived in mental unbalancing from ovariotomy, he believed the benefit to be due as much to the shock of the operation as to any curative effects accruing from the procedure.

Dr. Whorton Sinkler said that he had seen a severe case of melancholia markedly benefited temporarily by the severe shock sustained in falling forcibly against a marble mantel, causing a scalp wound of considerable extent, the shock of the fall clearing up the mental condition at once, though for a short time.

Dr. J. M. Anders, taking up the discussion from the standpoint of general medicine, mentioned tachycardia occurring during menstruation, various neuroses of the stomach, and a cough due to reflex bronchial stimulation or congestion as some of the nervous disorders connected with or excited by pelvic disease.

As bearing upon the subject under discussion, Dr. L. W. Steinbach and Dr. S. Solis-Cohen reported a case of kleptomania in association with uterine and rectal disease. The case is one of interest from the notoriety given to it by the secular press, as well as from the standpoint of medical jurisprudence, as the patient was legally prosecuted in England, and pleading guilty to the charge of larceny, was sentenced to imprisonment, but was released upon medical testimony submitted in her defense. The patient's history is briefly as follows: Mrs. C., aged thirty-four, has been married eleven years. She had one child ten years ago and no other pregnancy. During pregnancy she suffered much from hemorrhoids, and was operated upon, and since then has been subject to prolapse of the rectum, at times causing much distress. Previous to fifteen months ago she had suffered little from dysmenorrhea. About that time, following exposure during menstruation, the flow ceased and the patient was confined to bed for some days with headache and feverish symptoms. Since then there has been no real menstrual flow; there was more or less offensive discharge at irregular intervals, and after two or three months a slight watery discharge, at what should have been the menstrual period. For some days preceding this there has been considerable pain in the back and abdomen. The patient showed great nervous irritability and excitement. Inquiry into the patient's life showed that she had ever been "on the go," her day being one of excitement rather than mental occupation. The cheeks are constantly flushed. The left face is moved less than the right, the difference being easily observed; the eyes are roving and restless. In London (the husband states) she heard voices and would go to the door to listen. Later these were also heard at night. She was born with some foot trouble, walked at five years, and wore irons. The heart and lungs were normal, as was the urine. Vaginal examination by Dr. Steinbach showed that the uterus was hypertrophied to one and a half times its normal size; the mucous membrane was irregularly roughened, and bled on the slightest touch by the sound. The cervix had a bilateral laceration, more extensive on the left side. The tear was well cicatrized. The rectum was found to be fissured below, ulcerated above. There were evidences of former ulcers that had cicatrized, and several large hemorrhoids, which bled freely.

Later, under ether, the sphincter ani was dilated, the the fissures cauterized with a Paquelin thermo-cautery, the ulcers treated in the same manner, and the hemorrhoids clamped and cauterized. The uterus was curetted and then the trachelorrhaphy performed by denudation of the cicatricial tissue and suturing with silkworm-gut. The medical treatment of the case consisted in rest, nourishment, and massage. Since the operation she has menstruated twice, four weeks apart, and normal in amount and character. Within two weeks she has left Philadelphia for her home, apparently recovered physically, with her mental condition of such a character as to furnish some grounds, at least, for the hope of complete recovery. Dr. S. Weir Mitchell, who was called in consultation on the case, gave the opinion, which I quote in the hope that it may furnish food for reflection on the part of those who judge too hastily, without the full knowl- of the facts, in cases of just such a character as this.

"After the most careful study of the evidence in the case of Mrs. C——, and of the opinions of the English experts, also from a full knowledge of her case from personal examination of her condition while in this city, I have reached the following conclusions: (1) That Mrs. C——, when arrested and for a long time before, was suffering from a condition described by alienists as kleptomania. It is my carefully considered belief that when she took articles from others she was not then in a state to be aware of the moral nature of her guilt, or to recognize the almost certain consequences of repeated and often careless thefts. (2) I believe the basis of her mental disease to have been hysterical, and that it was largely brought about by long neglected disease of the rectum and uterus. This has now been skilfully cared for, and it is my hope and belief that the results of the operations performed will aid in the cure of the mental malady which the condition described had a large share in bringing about. (3) I do not think that Mrs. C—— was morally responsible for her acts during her stay in Europe, or for some time before that period. As to this I am at one with the English alienists, and believe the Home Secretary to have acted with ample proof when he released Mrs. C—— as insane."

OUR PARIS LETTER.

[From our Special Correspondent.]

PASTEUR'S TOMB—PROPHYLAXIS IN CHILDREN'S HOSPITALS—PRIZE WINNERS OF THE FRENCH ACADEMY OF MEDICINE FOR 1896—A SUGGESTION FOR AMERICAN SURGEONS.

Paris, January 16, 1897.

Pasteur's tomb at the Institute Pasteur is now open to visitors on the first and third Saturdays of each month, to-day being the first that the medical visitor, who did not care to be disturbed by the curious crowd that flocked to the opening, might make his visit in peace. The mausoleum is worthy of the great man whose mortal remains rest in it. The Minister of Public Instruction, in his address at the formal opening, on December 26, when the sarcophagus was transferred from the chapel in Notre Dame, where it had reposed for over a year, said that in other times pilgrimages to the tombs of great benefactors of the race had drawn crowds of devotees for years, sometimes centuries, after their death. To this tomb of the humble scientist, whose life had been spent so faithfully and so fruitfully for the benefit of his fellows, he hoped that during succeeding years the devotees of science would come and would there appreciate the greatness of the master's work.

The tomb is a marvel of artistic beauty, and is well worth a visit merely as a work of art. The architect was Charles Louis Girault, who has been chosen as one of two to make the plans for the buildings for the Universal Exposition to be held in Paris in 1900. The model that suggested the general plan of the mausoleum is the Galla Placidia at Ravenna, that wonderful work of Byzantine art that has attracted so much attention for some fourteen centuries. The cartoons for the interior decoration are from the hands of Luc Olivier Merson, who has just been engaged to design the decorations for the new Opera Comique here in Paris, and who shares with Puvis de Chavannes the honor of being the greatest decorative artist in France. The decorations are in mosaic by Auguste Gilbert Martin, who is eminently worthy of his collaborators.

The mural and tectal decorations are of varying greens on a groundwork of gold, that make a strikingly rich and pleasing contrast. Pasteur's work on wine and beer and silk worms give a very aptly symbolic meaning to the profuse employment of the beautiful shapes and the varying shades of green of the vine, the hop and the mulberry leaf, and this has been taken advantage of with wondrous effect. In the dome of the little Greek cross-shaped mausoleum are four figures of Faith, Hope, Charity and Science. They are sisters who are said not always to live in harmony, and if the youngest of the group does not find herself regarded askance by her older sisters here, especially by the eldest, Faith, it is that in some wonderful way in the life of the man whose ashes they now guard, devotion to one did not lead to neglect of the others, for biological studies, that are said usually lead away from old-established beliefs almost inevitably, did not, in his case, disturb the even tenor of the old ideas as they had come to him from a lowly but ever well-beloved father and mother.

Abroad one cannot help but think that a cloud still hangs over Pasteur's fame because of the lingering doubts still so prevalent as to the success of his treatment for rabies, though none, absolutely none of them, are left here in France. The other wonderful work of his life lies hidden somewhat behind that cloud, and its suggestiveness for other workers along collateral lines, sometimes at great distances from his discoveries, is lost sight of. It takes the beautiful tribute of a man like Sir Joseph Lister to make some of us carping foreigners realize how much Pasteur's work means to modern scientific medicine and surgery.

Lister attended the exercises as the representative of the British Scientific Society, and his tribute was that of one who felt how much of the work that he had done himself had owed its suggestion to that of another, and that other the man he was happy to be able to honor by bringing him the tribute of distant brothers.

In marble, beautifully veined in irregular dark lines, in red letters that mark the abrupt, incongruous, and usually too prominent effect of an inscription, are the scanty words that chronicle a life work rich in bounty for mankind, and that form some of the most brilliant pages in modern science.

1848. Molecular Dyssymetry.

1857. Fermentations.
1862. So-called Spontaneous Generation.
1863. Studies on Wine.
1865. Studies on Silk Worms.
1871. Studies on Beer.
1877. Virulent Contagions.
1880. Virus—Vaccines.
1885. Prophylaxis of Rabies.

They are just now deeply interested in France in the question of the prophylaxis in children's hospitals of what history sheets are prone to glibly call the usual diseases of childhood. All of them contagious, and to a great extent preventable by the adoption of proper hygienic measures, it has been the custom to make too little of some that are usually mild, and to consider almost that it was as well for an individual to have them when young and be done with them. More and more are the unsuspected after-effects of contagious diseases in childhood encroaching on the domain of etiological pathology in the matter of degenerations, both nervous and visceral, in later life. Besides this, some of these diseases have a distinct mortality of their own that is alarming enough when the statistics are presented. Whooping-cough is just now occupying attention in this line. In private practice in France the mortality ranges from six to ten per cent.; in hospital practice it is from twenty to twenty-eight per cent. Complications of the disease almost inevitably ensue in at least one-half the cases of the children of the poor, whose constitutions are undermined by other diseases when the infection of whooping-cough takes hold in the hospitals. Yet a series of well authenticated observations show that the limit of the contagiousness of the disease is always the apartment of the patient, the presence of a corridor between infected and uninfected wards being sufficient to protect the uninfected if reasonable thought and not very special additional precautions be taken.

French children's hospitals are about to take measures to segregate as far as possible all cases, even of minor infections, and prevent their spreading beyond original cases.

Just before Christmas the French Academy of Medicine announced its prize winners for the year 1896. Among a dozen of foreigners who received mention was one American. One is tempted to wonder if our enterprising countrymen would not be heard from more frequently in some of the competitions for the valuable prizes given for practical medical and surgical subjects if the conditions of competition were known. Here, for instance, are two competitions where Americans would not be handicapped in the race; the Laborie prize of 5,000 francs annually to the author of the work which will have caused the most notable advance in surgery during the year; the Argenteuil prize (sexennial) to be awarded next in 1899—value, 6,800 francs—to the inventor of the most noteworthy improvement in the matter of curing or ameliorating strictures of the urethra, or to the author of the best work on the treatment of other diseases of the urinary passages. In neither competition are translations required.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

ULCERATIVE STOMATITIS CAUSED BY ANTIPYRIN—SUCCESSFUL REMOVAL OF THE ENTIRE BLADDER—SURGICAL TREATMENT OF DEAFNESS—SOME SUCCESSFUL NEURECTOMIES—A NEW THEORY OF CICATRIZATION IN THE CORNEA—PENETRATING WOUND OF THE ABDOMEN CAUSED BY A BLANK CARTRIDGE—INDICATIONS FOR OPERATION IN RENAL TUBERCULOSIS—DEATH AFTER OPERATION IN EXOPHTHALMIC GOITER.

AT a meeting of the Therapeutic Society, held December 23, 1896, **DALCHE** reported a case of *ulcerative stomatitis due to the absorption of antipyrin.* The patient was a gouty individual of sixty-five years, who had often taken antipyrin without bad effects. One day, after a dose of thirty grains, an aphthous stomatitis appeared. An injection of fifteen grains of the same drug produced an ulcerative stomatitis with a purpural eruption of the skin. The urine contained an excess of phosphates and urates, but no albumin. A few days later it contained .3 per cent. of sugar. The cause of the intoxication by antipyrin could not therefore be explained by renal insufficiency.

At a session of the Academy of Medicine, held December 29, 1896, **GARNAULT** said that *chronic deafness may be treated by excision of the tympanic membrane,* ablation of the malleus and incus, and mobilization or extraction of the stapes, by means of operation through the mastoid process. This operation is justifiable when one has to deal with deaf persons, in whom it may be asserted, or at any rate assumed as highly probable, that the cause of the deafness lies solely or principally in lesions of the apparatus of transmission. Rinne's method of exploration nowadays permits the surgeon to distinguish with absolute certainty between cases in which operation should and should not be performed. In his opinion all patients by whom the vibrations of a tuning-fork are perceived more distinctly through the skull than through the air should be operated upon.

January 5th, **TUFFIER** described an operation performed upon a man aged forty, in whom a tumor occupied the entire left wall of the bladder and the mucous membrane of its fundus without infiltration of the lymphatic glands. The entire bladder was removed. Phlebitis of the right leg followed the operation. The ureters were catheterized for seven days, and then a hypogastric siphon tube was employed. The patient left his bed in seven weeks, and went to work in ten weeks, using a hypogastric receptacle for the urine. Upon microscopic examination the wall of the bladder was seen to be infiltrated by an alveolar epithelioma of an unusual type.

At the session held January 19th, **PEAN** presented a man, aged twenty-five, affected with multiple neuromata, upon whom he had practiced *resection of considerable portions of the median and ulnar nerves.* This operation was followed naturally by a paralysis, both motor and sensory, of the tissues supplied by these nerves. This paralysis gradually disappeared, until the patient was able to use his hand perfectly, except for delicate motions.

Ten months after operation all the neuromata which existed in the forearm and in the subclavicular region had disappeared.

Chipault showed a patient upon whom he had performed resection within the dura mater of the posterior root of the eighth right cervical nerve, for an obstinate neuralgia exactly corresponding to the distribution of this nerve. From the instant the patient recovered from the effects of the chloroform up to the time of his presentation to the Academy—a period of two years—there had been no return of the pain. The area of distribution of the nerve was hyperesthetic for about twenty-four hours. Aside from this there was neither motor nor sensory disturbance.

At the session of the Academy of Sciences held December 28, 1896, **Ranvier** advanced a new theory in respect to the *cicatrization of wounds in the cornea*, based upon experiments made upon living rabbits. As is well known, the cornea consists of an anterior epithelium, a layer of connective tissue without blood vessels, and behind, a single line of endothelial cells resting upon the vitreous membrane. The anterior epithelium is composed of several layers of cells, the deeper ones being cylindrical, the middle cubical, and the superficial flattened. Some of the deeper cells, known as foot-cells, are softer, and are filled to a greater extent with a nutritive matter than those which surround them, and by which they are, therefore, compressed. The corneæ were incised by Ranvier, and the wounds examined after various intervals. After twenty-four hours a wound was found to be lined throughout with epithelial cells, but the epithelium on each side of the wound, far from showing any signs of nutritive hyperactivity, as might be expected in accordance with the generally accepted theory, was markedly thinner than usual, and also changed in structure. The middle layer of cubical epithelium had partly disappeared, while the deep columnar cells had broadened out, and none of the highly nutritive cells before spoken of were to be seen. The process is apparently a mechanical one. The deep cells, like soft elastic balls, are packed together at a certain tension. If a hole is cut at one spot the balls escape, of course. Ranvier saw no traces of karyokinesis or direct cell division, but even if a few cells underwent such division this would not in the least detract from the importance of the facts above referred to.

At the Surgical Society, January 6th, **Michaux** reported upon a *penetrating wound of the abdomen, produced by the explosion of a blank cartridge*. The accident was caused by the careless handling of a Lebel rifle, the muzzle of the gun being very close to the skin at the time it went off. The result was a fracture of the left iliac crest and a perforating wound of the abdomen. The wound was enlarged, and numerous pieces of pasteboard and cloth were removed from the muscular layers, but a careful examination showed no trace of a lesion of the intestine. The laceration of the peritoneum was closed, and the external wound drained. No abdominal symptoms resulted, but the compound fracture of the ilium delayed recovery for two months.

Robert stated that experiments made by army surgeons show that pasteboard wads in blank cartridges are projected with a rapidity of about 700 meters per second, and that the expansion of the gases is considerable. With a blank cartridge a person can blow a ragged hole in a pine board similar to that resulting from the use of dynamite. The danger of wounds of this description is very great at a distance less than fifty centimeters, and blank cartridges ought never to be fired at a distance less than two meters.

At the session of January 13th, **Tuffier** expressed the opinion that *tuberculosis of the kidney is often primary and unilateral*, and, therefore, amenable to operation. If untreated, renal tuberculosis may give rise to certain accidents, to prevent which, as well as to remove a primary tubercular lesion, is the object of operation. The accidents referred to are hematuria, pain and infection, or intoxication.

Hematuria becomes an indication for operative interference only in those cases in which by its persistence or gravity it threatens the life of the patient. Tuffier had two cases of this character. In one of them the kidney was removed, while in the other it was merely incised. In both instances the hematuria was permanently relieved. In three cases under his observation pain was so persistent and severe that primary nephrectomy was performed. In two of these cases recovery was apparently perfect; in the other, a tubercular ulceration was afterwards seen in the bladder about the orifice of the ureter of the affected side. A most unusual case occurred in a physician who suffered for years with a tuberculous pyelonephritis and cystitis. Rectal examination showed a painful mass in the left part of the bladder. A cystotomy was performed, and an immense cyst was removed from the left ureter.

Accidents of infection or intoxication give the most frequent indication for operation. Such patients have an irregular fever, with evening rises, or digestive disturbances with progressive emaciation and cachexia, sometimes accompanied by pain in the region of the kidney and sometimes not, and either with or without pyuria. Tuffier operated nine times to relieve these symptoms of infection. The operations were five nephrotomies, two primary nephrectomies—one partial and one total, and two secondary nephrectomies. One of the nephrotomies died from the operation. The primary nephrectomies both recovered. Prognosis in secondary nephrectomy is very grave, and if indicated this operation should be performed with as little delay as possible, in order to remove from the body the focus of infection.

Galliard reported a case of *acute sygmoiditis* to the Medical Society of the Hospitals, January 8th. The patient was a woman, aged twenty-eight, who had had no movement of the bowels for a week, and had vomited for two days. Examination showed a large oval non-fluctuating tender tumor in the left iliac fossa. The pelvic organs were normal. The temperature was 39.1, C. Gas passed frequently *per anum*. A purgative was administered, the bowels moved, and the fever subsided. Although no pus was evacuated the iliac tumor rapidly decreased in size, and was no larger than a walnut at the time the patient left the hospital.

January 15th **Debove** reported a *fatal case of thyroidectomy performed in Graves' disease.* The operation was without any complication whatever. Only the right lobe of the gland was removed. For several hours the patient presented no unusual symptoms. About 6 o'clock of the day of operation there was slight dyspnea, which rapidly became worse, and was followed by agitation, delirium, and coma, death occurring the same night. Nothing was found at autopsy to explain this sudden death.

Marie thought that a distinction should be made in exophthalmic goiter between those cases which begin with tachycardia and develop afterward the thyroid enlargement and those cases in which the goiter precedes the palpitation by possibly fifteen or twenty years. His study of statistics (which, unfortunately, are often incomplete on this point) has led him to believe that most of the fatal operative cases belong in the former class, and most of the recoveries in the latter. The results of treatment by thyroid extracts correspond in this respect to the results of operation, for this treatment is useless or injurious in the true exophthalmic goiter, but is beneficial in those cases of goiter which have taken on symptoms of the exophthalmic type.

Vienna.

CURIOUS THICKENING OF THE VEINS—AMBULATORY TREATMENT OF FRACTURES OF THE FEMUR—DIAGNOSTIC WORTH OF HYPERLEUCOCYTOSIS OCCURRING DURING DIGESTION.

At the session of the Imperio-Royal Medical Society held December 18, 1896, **Schlesinger** described a curious thickening of the superficial veins which he observed in the extremities of two patients. The veins were very stiff and scarcely compressible. There were no subjective symptoms. One of the cases came to autopsy, and there was found an extensive phlebosclerosis without any sclerotic change in the arteries. He had observed several similar cases in which the stiffness of the veins was only temporary. In two of these the condition could be brought about by the application of ice or electricity, and relieved by the application of heat. One of these veins was removed. It was stiff at the time, but collapsed before the operation was finished, and neither by macroscopic nor microscopic examination could anything unusual be made out in its walls.

At the session of January 8th **Haudek** presented a case of fracture of the femur treated by him in an ambulatory apparatus, as recommended by Hessing. The principle of this and other forms of apparatus is the production of extension and counter-extension, together with fixation of the fragments. A plaster of Paris bandage fulfils better than Hessing's apparatus the last mentioned requirement, but with the disadvantage that it often produces pressure necroses and stiffness of the joint. Hence, he prefers the other apparatus, which, if carefully moulded to fit the limb, gives entire satisfaction. The advantages of ambulatory treatment are a reduction of the time of convalescence by reason of a rapid formation of callus (the tissues being better nourished through the blood), an avoidance of atrophies, an improvement of the general health, and a prevention of a long rest in bed, which is especially dangerous for old people and drinkers.

Schur found as the result of investigations carried on by himself and Burian that in most cases a hyperleucocytosis accompanies digestion, but that the time of its commencement and continuance vary greatly. He, therefore, concludes that on account of its slight degree and inconstancy, and occasional absence altogether, that it has no diagnostic value as an indication of the state of the digestive faculties.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting held January 25, 1897.

The President, Dr. Landon Carter Gray, in the Chair.

R. C. M. Page, M.D., read a paper on

PLEURISY, ITS DIAGNOSIS AND TREATMENT. (SEE PAGE 198.)

DISCUSSION.

Dr. E. G. Janeway said that the etiology of the disease is of great interest. It is not uncommon to meet with an explanation of the cause of the disease in cases where septic processes exist in other parts of the body. He had seen several such cases, in one of which there was a cellulitis of the arm. Pneumonia developed, followed by a rapid accumulation of fluid in the pleural cavity, which was feared to be an empyema, because of the coexistence of the cellulitis. Whispered resonance was absent, which, under these circumstances, usually means pus in the chest, but on aspiration the case was found to be one of serous pleurisy. For diagnostic purposes it is better to employ an aspirating needle rather than a hypodermic needle, and the fluid should be drawn off. He had frequently drawn off as much as twenty ounces of serum, which contained very little fibrin and no microörganisms. He thought the accepted ideas as to the etiology were not always satisfactory, and did not believe there was such a thing as rheumatic pleurisy, although pleurisy is often associated with rheumatism, and at times with pericarditis. Rheumatic pneumonia is simply a double pleurisy. In such cases he has introduced a needle into the top of the lungs, and found fluid in most of them.

Another diagnostic point is the differentiation between pneumonia and pleurisy. In pneumonia of the lower lobe there is always a line of flat dulness; in pleurisy a line is also found, its highest point being in the axilla, lower in front and lower behind. Of course if there are adhesions, the curved line will not come out so completely. A change of position will also make a difference. In pneumonia associated with a compressed bronchus, the differentiation is not difficult. Two methods can be employed, one of which is mensuration, which is too often neglected in the diagnosis of chest diseases. With a pleurisy filling one side of the chest, there will be increased mensuration on that side. With pneumonia and a compressed bronchus there is rarely an increased mensuration. The second test is the heart displacement, which is of great importance. In pneumonia the heart will be in a normal position; in pleurisy, it will be displaced. Attention to these points will save a good deal of time and trouble, and will sometimes prevent the introduction of needles into an adherent lung. Mensuration should always be employed before aspiration. In regard to voice sounds, in an obstructed lung there will be an absence of whisper resonance; in pleurisy with effusion, the voice will sound distant, and in empyema there may be a total absence of voice.

As regards the use of blisters, he thought that they are not infrequently of service. He had seen blisters applied in the first stage that were apparently followed by almost instantaneous cessation of pain. The use of salicylate of soda is followed by good results in the rheumatic type of cases, improvement occurring rapidly, from which fact it might be inferred that the pleurisy is rheumatic in origin. He advocated dry diet, allowing fluid equal to two-thirds of the amount of urine passed by the patient in twenty-four hours. He uses iodid of potassium in some cases, but has found that patients with much fever do not stand this treatment well, in which case it must be stopped and tried later on.

Rules regarding when to aspirate are variable, and at times a good deal depends upon the patient. Some will not submit to aspiration, and then it must be postponed until their frame of mind changes. Aspiration should always be employed when there is dyspnea, which renders the patient uncomfortable, never mind at what stage of the disease. In regard to the point at which to aspirate, he preferred the fifth or sixth interspace in the axilla, or between the eight or ninth ribs in the scapula line, and never higher, except in those very rare eases of upper lobe pleurisy. He had met with several instances where the pleurisy was sacculated in the upper lobe, and there was no fluid below. Such cases are most difficult of diagnosis, and their nature could be determined only by aspiration or exploratory puncture with a hypodermic syringe. In regard to the effect of aspiration, he thought that even the withdrawal of a hypodermic syringeful of fluid will relieve the pleurisy, and that not only does it do good at the time, but afterward. He thought this was due to the fact that the pleura is actually punctured by the aspirating needle, allowing the fluid to drain into the subpleural tissue whence it is absorbed.

In tuberculous pleurisy, he had tried a plan of treatment which had met with success in two cases. He had injected creosote in alcohol into the pleural cavity with good results. In a third case, empyema had followed, which was probably due to some infection. In cases of pus in the pleural cavity everybody agrees that the best thing to do is to incise and drain. It is a waste of time to aspirate in such cases.

DR. H. P. LOOMIS said the subject of the etiology is a very important one, and one in which he was especially interested, as he had been making a study of it for the last five or six years. As his observations had been made in the autopsy room, his conclusions were based upon facts and not upon theories, and his opinions were confirmed by investigations of foreign observers.

The idea of the tuberculous origin of the disease had not been borne out by his studies. Of course, there are cases in which pleurisy has been followed by tuberculosis, but these are not tuberculous in the beginning. Within a day or two he had gone over a list of 300 autopsies made under his personal supervision during the last year or two, of which notes had been carefully taken, and especially so in regard to the condition of the pleural cavity and lungs. Of these 300 cases twenty-seven showed an acute pleurisy, of which only three were tuberculous. Another set of ten cases showed subacute pleurisy, and two of these had advanced tuberculosis, which had apparently preceded the pleurisy. Another interesting point was that when pleurisy develops in cases of advanced phthisis, it seemingly causes the latter disease to come to a standstill.

Regarding the presence of fluid in the chest in pleurisy preventing the formation of adhesions, he had tried injecting sterile fluid into the chest for this purpose, but had never been able to find any which would remain there without being absorbed. In his observations over fifty per cent. of all cases of pleurisy showed adhesions, indicating, in some instances, a localized pleurisy, from which the patient recovered,

DR. FRANCIS DELAFIELD said that the relationship between tuberculosis and pleurisy was something which had been very much written and talked about during the last few years, so much so that some conclusion should be arrived at. To do this it was first necessary to determine what is meant by "tuberculous inflammation." In his opinion, this was an inflammation in which tubercle bacilli were present in the inflamed tissues and in the exudation. He did not think a pleurisy could be called "tuberculous" unless tubercle bacilli were found in the pleura and in the exudate.

There are four different conditions under which pleurisy may be found. In the first place, there may be a localized tubercular pleurisy without tubercle bacilli in the lungs. In the second place, there are patients with tuberculous lungs and tuberculous pleurisy. Thirdly, there are patients with tuberculous lungs and a pleurisy that is not tuberculous—in which no tubercle bacilli can be found in the pleura or in the exudate; in other words, a simple pleurisy occurring in a person afflicted with tuberculosis. And lastly, there are ordinary cases of pleurisy with effusion, acute or subacute.

In regard to the treatment of pleurisy with effusion, the speaker said that in the early years of his experience he had followed the routine plan, consisting of the repeated application of blisters to the chest, and the administration of iodid of potassium and digitalis, and waited for the fluid to be absorbed. If fluctuation were present the fluid was drawn off with the trocar. He first gave up the blisters, then he began to give less and less drugs, and then he began to aspirate earlier and earlier, until, within the last four years, he had reached the conclusion that aspiration was *the* treatment for pleurisy, and was to be employed not merely to draw off the fluid, but to cure the disease in the shortest space of time. Now his ordinary routine treatment is to aspirate for the cure of the pleurisy in all cases in which there is an appreciable amount of fluid in the chest cavity, it mattered not whether the case was one of acute or subacute pleurisy, or whether or not the patient was uncomfortable. As to the amount of fluid to be drawn off, this varies with the amount present; if there is not much he draws off all he can; if the chest is distended with fluid he draws off a moderate quantity. The largest quantity he had ever drawn off was 3,700 cc., and the smallest 90 cc. Ordinarily only one aspiration is required, and a week later the patient is generally well enough to get about. He thought that any one who follows this method of treatment will be surprised to find how much the duration of the disease is shortened. He thought that most cases of simple pleurisy with effusion get well in the long run—sometimes in two or three weeks, sometimes in two or three months; but it makes a great deal of difference to most people whether they get well in two weeks or in two months, and for this reason he considered the treatment of pleurisy by aspiration to be the best, and therefore recommended it highly.

Dr. J. S. Winters said in regard to whispered resonance, that it seemed to him that this depends largely upon the amount of fluid present between the lung and the chest wall. In simple pleurisy with effusion, which has lasted for several weeks, resonance is absent, as in cases of empyema. The reason why whispered resonance is almost invariably absent in cases of empyema is because there is extensive thickening of the pleura, and it is absent in some cases of pleurisy with effusion for the same reason. He said that he was very glad to hear the remarks of Dr. Delafield with regard to aspiration being looked upon as a means of curing pleurisy with effusion. The fluid in these cases usually undergoes absorption, which lasts week after week and month after month, while the physician waits for it to disappear; whereas a permanent and early cure can be effected by aspiration. The withdrawal of a large amount of fluid, he thought, is apt to do harm if there is much effusion, while the withdrawal of a comparatively small amount stimulates absorption, and this may be repeated many times with impunity. He was of the opinion that much harm has been done by neglecting this simple and harmless procedure. He saw no reason why a case of simple effusion should not be incised and drained if several aspirations fail to relieve the disease.

In his experience he had found that in cases of serous effusion in children absorption took place rapidly (in from one to four weeks) without operative interference.

Dr. Beverley Robinson said that it was difficult to add anything to the discussion, as all the important points had been so thoroughly covered. He could only confirm what other speakers had said. He was very happy to hear Dr. Delafield speak in such decided terms of what he had personally long believed to be the proper treatment of pleurisy. His internes at St. Luke's Hospital could bear out his statement that for the last ten or fifteen years he had aspirated whenever there was fluid in the chest. He thought this should be the rule in hospital practice, and in private practice, too, if possible. However, there were certain reasons, which were known to his hearers and which needed no further mention, connected with private practice which made it sometimes impossible to treat cases as one would in a hospital. He was of the opinion that aspiration of the chest does no harm, and almost invariably does good. In his personal experience he had never seen a case in which aspiration, properly performed, had done harm to the patient, and many times in the *post-mortem* room he had regretted that he had not aspirated. He had met with many cases of pleurisy with effusion and pneumonia following or accompanying "grippe," and sometimes it was difficult to make the diagnosis. He had seen cases in which there was no marked diminution of vocal resonance and no absolute dulness or flatness on percussion. He had been unable to explain this to himself, but thought it was due to the differences in the thickness of the chest wall and the different capacities of different chests. All of these reasons seemed to him at times to explain an error in diagnosis. Some men seemed to have a dread of aspiration for some reason—probably because they feared evacuation of the fluid in acute fibrinous pleurisy would increase the danger of adhesions forming, and also that the pleurisy might be changed into an empyema. He was also of the opinion that in a limited number of cases the application of a small blister to the area of pleuritic inflammation is almost always a means of aborting the inflammatory condition, and will sometimes prevent the formation of fluid in the chest.

He laid great stress upon the fact that the majority of these cases have no tuberculous taint. This was especially true of cases among the better class of patients. The sputa of such patients should always be examined for tubercle bacilli. The salicylates he considered of but little value in the treatment of pleurisy, unless manifestations of underlying conditions showed over and above the pleurisy.

Dr. Charles E. Quimby said that he regretted that he had not had the success promised by Dr. Delafield in treating pleurisy by aspiration, although he was willing to say that this might have been due to lack of care in other ways. According to statements made in the discussion in regard to the etiology of the disease, there are two classes of cases—those in which the disease is due to bacterial origin, and those in which it is dependent upon the development of a toxin, *i. e.*, ptomain poisoning. He did not believe that good results could be obtained by treating these two classes of cases in the same way, for one is due to the presence of a distinct bacterium and the other to the existence in the blood of a substance which is soluble and capable of being absorbed. He could not help feeling that lack of knowledge as to the etiology of the disease had very much to do with the difficulty in determining what line of treatment should be employed. These cases have very different constitutional symptoms, which are dependent not so much upon the resisting powers of the patient as upon the primary cause of the disease. He found himself treating pleurisy by means of calomel and Warburg's tincture, not thinking of the pleurisy itself, but of the toxemia which caused it. Of course, the administration of such drugs had no effect upon the first class of cases, *i. e.*, those due to bacteria.

He had been in the habit of using the pneumatic cabinet referred to by Dr. Page, and thought the benefit derived from it was due to the chest gymnastics, which causes expansion of the lungs and improves the local circulation, and not to any direct pulling upon adhesions. Hill climbing had a similar effect. He thought that any attempts at breaking up adhesions, if carried too far, would increase them, but that any exercise which will improve the pulmonary circulation will relieve the contraction of the lung, which is marked by shortness of breath that is so distressing, unless the lung has gone on to complete contraction. In one case of his, in which the diagnosis had been made by Dr. Janeway, the whole upper part of the lung was covered with adhesions, and there were abundant sticky, plastic râles, and the patient was becoming worn out and thin; relief followed the systematic use of the cabinet.

Nothing had been said about the cough of dry pleurisy. He was convinced that there is no such thing as a useless cough, and the cough of dry pleurisy showed that it is intended to irritate and stimulate the circulation, just as nitrate of silver stimulates the circulation of the tissue upon which it is applied.

Dr. W. H. Katzenbach was glad to hear mentioned the importance of cardiac displacement and mensuration in the diagnosis of pleurisy, and thought many doubtful cases might be cleared up by these means. Regarding the use of the salicylates, he had employed them with good results, especially in rheumatic patients. He was in favor of early aspiration in sero-fibrinous pleurisy, generally waiting until after the first stage, which lasts a week or ten days, but not always until the fever has subsided. The point he selects is at the angle of the scapula, usually in the eighth space, because there one can get near the point where the fluid gravitates. He had withdrawn as much as four or five pints without ill effects, and preferred to use an aspirating needle rather than a hypodermic needle, because of the larger diameter of the former.

Dr. Egbert Le Fevre said that when we remember the curved line of Ellis is formed by the rising of the lung, it is of great diagnostic significance in determining whether there is fluid present in the pleural cavity and whether there is a pathologic condition of the lung which prevents it from retracting and exercising a suction action upon the fluid and rising up in the axilla. In this way it is possible to determine whether the pleurisy is primary, or secondary to some other diseased condition of the lung. In regard to the absence of whisper resonance in empyema, he had seen cases in which it was distinctly marked. As to the treatment of pleurisy with salicylic acid, he referred to observations which had been made in which salicylic acid had been found in the pleura almost immediately after it had been administered, and that, therefore, it was probable that it had a local curative action.

Dr. Page, in closing the discussion, said that cases in which there was fluid at the top of the chest were very rare. He had only seen one case, and that had proved to be a hydatid cyst. Regarding aspiration of the pleural cavity in pleurisy with serous effusion, he did not think he would aspirate on the third day, in spite of what had been said. He would wait at least two weeks. He referred to two communications which he had received in connection with his paper, the substance of which was as follows :

Dr. Frederick C. Shattuck of Boston: My teaching from Bowditch and others was not to tap pleural effusions unless their size made them urgent in the acute stage. This practice I followed for awhile, but as time has gone on and personal experience has accumulated, I have been led to tap earlier than formerly, and, I think, with benefit. I tap now: (1) Large effusions, of course, immediately, not, however, attempting to empty the cavity. I stop as soon as constriction of the chest or cough or pain is at all marked. (2) A chronic effusion I also tap promptly unless it is a complication of *pulmonary* tuberculosis; in this case I may delay. (3) Acute pleurisies with effusion moderate in amount I do not tap, as a rule, unless they give rise to discomfort. I wait a week or so for spontaneous absorption, aided by dry diet and purgatives. But I do not wait for fever to subside to interfere, and have thought, in a number of cases, that the disappearance of the fever was hastened by operation. It would seem reasonable to think that if we wait too long tough adhesions are more likely to form, rendering the reëxpansion of the lung more difficult, and complete restoration more tardy. When I believe the fluid in the chest is under tenison, I do not use the aspirator, preferring the gentle and more uniform force of siphonage.

In most cases I do not believe it possible to entirely empty the chest with the needle or trocar. Oftentimes the removal of a moderate amount of the fluid seems sufficient to start up absorption of the rest.

Dr. James Tyson of Philadelphia: (1) By far the most reliable physical sign of pleurisy is absent or diminished fremitus, in my experience, almost witheut exception. I am aware, that, in the empyemas of children, it is said that fremitus is sometimes increased, but, though my experince is not large in that line, I have not met such a case. (2) I rarely find it necessary to use the needle in diagnosis; indeed, almost never. I see, however, very little or no danger in it, provided it is used with aseptic precautions. (3) I cannot say that I have been often able to verify the curved line of Ellis, but it may be that I have not been often forced to do so. (4) The treatment required varies so much with the severity of the disease that it is not easy to state it briefly. In severe cases, with extensive involvement of the pleura, wet cups are decidedly the most efficient remedy for the relief of pain and cutting short the process. Between hot and cold applications the former is the more satisfactory, but neither is sufficient to relieve pain when it is severe. Even large hypodermic injections of morphin are temporary in their effect, while wet cups are permanent and lasting. Strapping the chest with strips of adhesive plaster is a helpful measure.

In limited areas of inflammation, I use blisters and hypodermic injections of morphin for the relief of pain.

I have not used sodium salicylate largely, and prefer the iodid of potassium for promoting the absorption of effusion.

I do not aspirate early in the attack unless the patient is in danger from the excess of effusion, preferring to await the abatement of the fever, because while this lasts I consider the inflammation as still going on, and that the fluid will reaccumulate. Where the effusion is not large, I prefer to wait awhile to give Nature a chance to assert herself, aided, if possible, by the iodid of potassium, blisters, diuretics, purgatives and dry diet. Often these measures suffice. When I tap I generally take away all I can get, though I have not infrequently been compelled to desist because of pain and coughing. I always use the aspirator. Empyemas I hand over to the surgeon for drainage. Simple sero-fibrinous effusions, which are promptly followed by recovery, I do not consider of tubercular origin, though I believe empyemas are.

I have not heretofore availed myself of hill-climbing or the pneumatic cabinet in the after treatment, though I recommend patients to use gymnastics which favor the expansion of the chest and inflation of the lungs.

(5) One word with regard to sudden death in pleurisy with large effusions. It is an ever-present menace to me, because within a year past it has happened to me to have a patient in a condition of supposed convalescence, and to have him die within two hours after I left him. He was a clergyman between thirty-five and forty years old, who acquired a pleurisy in which the effusion took place rapidly, and the right pleural cavity soon filled up almost to the top, and aspiration became necessary. I never had a case of sudden death during tapping, but for some reason I feared it in this case. I tapped him while he was lying down, removing a large quantity of fluid, but not all. He seemed much relieved, and, as I have already stated, I considered him convalescent when he died suddenly. On autopsy I found a good deal of fluid still present, and I think it had reaccumulated after the tapping. No cause could be found for the sudden death. There was no valvular lesion, though the heart appeared softer than natural, but without microscopic examination.

REVIEWS.

MODERN GREEK MASTERY. A Short Road to Ancient Greek. By THOMAS L. STEDMAN, A.M., M.D. New York: Harper & Brothers. 1896.

The purpose of this new introduction to modern Greek is well explained in the preface. The author believes that the study of the modern language, as he represents it, is the best road for a student to take who is desirous of becoming acquainted with the literature of ancient Greece. He also cherishes the idea that the so-called "pure" modern Greek (*γλῶσσα αθαρεύουσα*) may become a common medium of expression for international congresses and the like. These views are not held by any large number of competent scholars, though it would be unfair to say that they have not been advocated by some whose opinion is entitled to respect.

A modern Greek learner has unquestionably considerable advantage over a foreigner in beginning study of the ancient language. Of course, his ear is already accustomed to the sound of many words in the ancient literature, and the new vocabulary will give him comparatively little trouble. For the more advanced student, however, the modern language is not especially helpful. Is it worth while then for a foreigner who wishes to learn ancient Greek, but who cannot have the training for his ear which a visit to Greece might give, and is thus debarred from putting himself in the place of a Modern Greek beginner, to take the time from his reading of the easier Attic authors and from his study of the excellent short grammars of the ancient language, which are at the disposal of every student, that he may master the highly artificial dialect which is set forth in such books as this of Dr. Stedman, and in others like it? Most people will say that it is not worth while. For this dialect is artificial. It is not the language *spoken* throughout the Levant, nor is it the language of the real literature of modern Greece—a literature which is redolent of the very soil from which it springs, and is the foundation upon which there is still hope that a more highly developed literature may some day arise.

To discuss such questions is not within the province of a brief notice like the present one. It is enough to say that Dr. Stedman's statement on pp. iv. and v. of his preface in regard to the relation of modern to ancient Greek and the analogous relation of modern to early English would not generally be admitted. And, if this is not admitted, his theory as to the best method of approaching the study of the ancient language cannot be accepted.

In regard to the possibility of using this "reformed" language in international deliberations—that is a matter for the future to decide. When one is able to hear it in a running *ex tempore* debate in the Athenian *Βουλή*, its adoption by foreigners may seem more likely than it at present does.

But, if we cannot take the point of view which the school represented by Dr. Stedman advocates, this point of view once taken, his book may be highly commended. If the student wishes to learn to read the more important Athenian newspapers or the New York *'Ατλαντίς*, the *Modern Greek Mastery* will be an excellent guide to him. On the other hand, if he wishes to travel in Greek lands and to know the cordial and interesting Greek of the village and country, he had better turn to other books for help. When his host gives him a morning greeting and asks the familiar question, *κοιμήθηκες καλά, κύριε;* he will have to turn to Dr. Stedman's *appendix* to know what the singular k-form can mean. Such forms are "vernacular;" in other words, they are what the modern Greek learns at his mother's knee, and what he commonly uses when speaking naturally.

The general plan of the book seems admirable, and the exercises are excellently adapted to their purpose. The typography, also, leaves nothing to be desired. The simple and clear statement on page 5 of the twofold pronunciation of x is a matter too often overlooked.

TRAITÉ DE MÉDECINE ET DE THÉRAPEUTIQUE. By P. BROUARDEL, A. GILBERT, and J. GIRODE, Assisted by a staff of collaborators. Paris: J. B. Bailliere et fils, 1895.

THIS stupendous work promises to be a system or cyclopedia of medicine, rather than an ordinary treatise. Brouardel is so well known that any work emanating from his pen is deserving of careful perusal and study. Among the collaborators are to be found names which have become famous in French medical thought and investigation. It would be invidious to single out such names as Deschamps, Dupré, Galliard, Gaucher, Graucher, Hallopean, Hanot, Hayem, Lancereaux, Landouzy, Laveran, Netter, Roger, Tessier, Widal, and Wurtz as deserving of special mention among the other equally famous men who have lent their aid to what promises to be (if we may judge from the first volume) a monumental work on French medicine.

The work will be published in ten volumes. Judging from the amount of space devoted to each subject in the first volume, ten volumes the size of the first, which contains 814 pages, will be insuflicient to complete it, or the subsequent volumes will have to be increased in bulk, or, finally, the matter in the other volumes will have to be condensed and contracted to keep the work within the proposed limits.

The first volume deals with the microbic diseases. The various chapters therein are very complete, and represent the knowledge thus far acquired concerning the diseases discussed. There can be no doubt that the subjects are extremely well treated, and among them may be mentioned that on scarlatina, by Wurtz; grippe, by Netter; diphtheria, by Graucher and Boulloche; an excellent article on streptococcic infection, by Widal; pneumonic infection, by Landouzy, and, finally, one on typhoid fever, by Brouardel and Thoinot. We notice with pleasure that in some of these articles race hatred is put aside, and that free credit is given to German thought and German methods of treatment.

ANNOUNCEMENT.

MINIMUM REQUIREMENTS OF THE PENNSYLVANIA STATE BOARD OF HEALTH, FOR THE PRODUCTION OF VACCINE VIRUS, ANTITOXIN, TUBERCULIN, AND OTHER ANIMAL PRODUCTS USED IN MEDICINE.

I. *Location of Establishments.*—The open country, or the suburbs of a town or city, should be selected. In such locations cattle will be more easily secured, the air will be more wholesome, and the disposal of manure can be more satisfactorily accomplished. Great care should be taken to secure a dry, warm, and sheltered location, with every facility for complete drainage.

II. *Buildings.*—The buildings should be erected with all known sanitary requirements in mind. They should be warm and sunny in winter, and cool and dry in summer. Complete arrangements should be made for ventilation and sewering. Windows should be numerous, for changing of the air when needed. Blinds and fly-screens should be provided for summer. Wooden stables should be preferred to those of stone or brick, because they can be kept dryer. Brick buildings, with air-chambers in the walls, however, will answer.

There should he at least two stables and an operating-room. One stable should be for the reception of cattle and for those which have been operated upon. Here the cattle may be tested and examined. The second should be the incubating stable. The operating-room should not communicate directly with the incubating stables, but by a passage. It should be well lighted by windows and sky-lights, and have abundant means of ventilation. The walls may be either of matched boards and painted, or of plaster, which should be frequently whitewashed. The floor may be of concrete, and so constructed with drains that they may be easily washed and kept absolutely clean. All the woodwork of the stables should be of smooth finish, to permit of ready cleansing and disinfection.

III. *Qualifications of Proprietor or Superintendent.*—The person in practical charge of vaccine production should be either a physician or a veterinarian, trained in general sanitation and hygiene, bacteriology and pathology. He should have an intimate knowledge of the pathology of infection, and of the principles of *asepsis* and *antisepsis*. He should be trained in animal pathology, especially on the subjects of septicemia, tuberculosis, Texas fever, anthrax, glanders, foot and mouth disease, and skin diseases.

IV. *Choice of Animals.*—1. The age of cattle should not be under three months nor over thirty months.

2. The history of the cattle should be minutely inquired into. Any with tubercular history should be excluded. All animals previous to admission to the stables with other animals should be carefully tested with tuberculin. They should be subjected to rigid physical examination. Any with persistent fever or cough should be at once excluded. Strong animals should be used, never those that are pregnant or those which have recently calved.

V. *Care of Animals.*—1. Animals should be treated kindly and considerately. They should be allowed to rest after arrival. They should be carefully cleaned, and clipped if needed; every day they should be carefully groomed and any sores or injuries attended to.

2. They should be well fed and watered. Good food should always be chosen. Any very dust-bearing food in a dry state should not be used. The food at some time in the day should contain grain. Hot mashes are useful. The water supply should be ample. Animals with fever, like human beings, need water. Hay and other food should always be absolutely free from mold. Bran and sweet corn chopped with hay are the best winter foods. In the summer time such crops as green rye, green wheat, grain, cow peas, German millet and

sowed corn may all be used. Ensilage should not be fed. When any animal refuses to eat or drink for twelve to twenty-four hours, the vesicle will abort and should not be used.

The stables should be kept *absolutely clean*. This is secured by having one man devote his whole time to this work, and droppings should be removed at once. The stables should be liberally bedded with clean wheat straw (oat straw should not be used), swamp hay, dry sawdust, or German peat. The latter, from its great absorbent power and antiseptic action, is highly commended.

In the winter term a temperature of 62° F. is correct.

Under no circumstances should the cattle be confined by immovable stanchions.

At least twice a year there should be a general and complete house-cleaning. The woodwork should all be scrubbed with hot water and soda, and then wiped with a solution of mercuric chlorid.

VI. *Precautions in Operating*.—1. The animals should be fed properly and washed thoroughly, if necessary, in such a manner as to render them practically antiseptic before operation.

2. The operating room shall be at all times aseptic; floors, walls and ceilings must be of matched hard pine, or other hard wood, and oiled. They shall also be washed in bichlorid of mercury solution from time to time.

3. The operators shall, before operating, render their hands and instruments aseptic, and put on a clean garment covering their other clothing, which garment must be washed and boiled as often as it becomes soiled; they shall also wear a cap of like material, and treat it in the same manner, or disinfect the head and hair thoroughly.

4. All operations, and the care of virus after taking, shall be under the supervision of a competent bacteriologist, and no virus shall be taken from any calf until it has passed his inspection.

5. Inoculations may be made on escutcheon, back, or belly. The first is preferred.

6. Instruments, hands of operator, skin of animals, and all apparatus, should be kept sterile at all times. Points, tubes, or other containers should be sterilized by heat.

7. The seed should be good, clean lymph. Lymph tinged with blood may be used; it is often the best. Crusts or pussy lymph should not be allowed as seed.

8. Antiseptics should be freely used on the skin after shaving and before inoculation.

VII. *Collecting the Lymph*.—The lymph is collected from the fifth to the seventh day, as determined by the areola and the temperature of the animal, which now reaches the highest point, *viz.*, 102–104° F. The virus is always taken before the vesicle reaches the pustular stage. The vesicle is well sponged with warm water, the crust removed, and the exuding virus collected on a sterilized camel's hair brush and transferred to sterilized ivory points, or collected in sterilized vials or glass tubes. The old method of dipping the ivory points into the vesicle, being painful to the animal and non-hygienic, should be discontinued. No pressure should be used on the vesicle, which should be allowed to yield its lymph of its own accord.

After the lymph has been secured the vesicle should be well oiled, and the animal carefully protected for several days, after which it may be removed to the first stable until convalescence is fully established.

VIII. *Care of the Lymph*.—The virus may be placed on the market on ivory points or quills, or in tubes and vials.

Points and quills should be carefully dried in a sterilized receptacle and put up in sterilized paper, or sterilized metallic tubes or bottles, and sealed. Virus to be placed in vials or tubes is first mixed with chemically pure glycerin, and then sealed hermetically. As an additional preservative trikresol may be added.

Every package of virus must have on it the name and address of the propagator, and the date when the virus was taken.

No vaccine virus will be approved by the State Board of Health of Pennsylvania unless propagated in accordance with the provisions of the aforesaid rules.

IX. *Requirements for Diphtheria Antitoxin, Tuberculin, Mallein, and Other Animal Products Used in Medicine*.—The establishments for the production of these animal products shall possess all the sanitary requirements as for vaccine production. They shall be in charge of a person trained in medicine, bacteriology, general sanitation, and pathology. The animals employed shall in all cases be strictly healthy, and shall be cared for in a healthy and humane manner. The premises shall at all times be kept *absolutely clean*. All operations shall be performed with the greatest possible care, observing all known antiseptic precautions.

X. To receive the certificate of the Pennsylvania State Board of Health any establishment producing any animal product used in medicine must at all times be freely open to the Board, its agents, and inspectors. Every such establishment must be conducted in such manner as the Board directs, and must submit to inspection by experts in bacteriology, pathology, and veterinary medicine so often as the Board may direct. All the processes employed, both in the production of the products, as well as in their preservation, must be made known to the Board.

XI. No preparation of antitoxin, tuberculin, mallein, or other animal product used in medicine shall be offered or exposed for sale in Pennsylvania unless the receptacle containing such preparation bear a label, or upon a circular accompanying such receptacle and enclosed with it in a sealed package, shall be printed or written the date of the production, and the value of the contents in antitoxin (or other products) as measured by some generally recognized standard.

XII. All certificates issued by this Board for animal products shall be dated, and shall be good for one year only, which shall be stated in each certificate. They may be revoked for cause at any time.

G. G. Groff,
Chairman Committee on Preventable Diseases.

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ORIGINAL ARTICLES.

THE DIAGNOSIS AND TREATMENT OF POTT'S DISEASE OF THE SPINE IN THE ADULT.[1]

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IT has often been stated in public discussions that Pott's disease of the spine as it occurs in the adult is a most inveterate and intractable disease to treat, and that the patient submits very unwillingly to any form of restriction. It has been further stated that apparatus is not so available as it is in the disease occurring in childhood, and that when an abscess appears the prognosis is necessarily grave. Very few of the text-books dwell at length on this subject, and for this reason I have made an effort to collect a few typical cases that will illustrate the ease with which the disease can be managed by adherence to principles which govern us in the management of the affection in childhood and adolescent life.

Before proceeding to the narration of cases, I should like to present some points for discussion in the diagnosis of Pott's disease, and to illustrate these features by clinical records. In selecting material for illustration, I find complete notes of a number of lesions or diseases that simulate Pott's disease, such as irritable spine, with neuroses of hip or knee, railroad spine, hysterical spine, multiple osteo-myeletis, in which the spinal column participates in the disease, fracture of the spinal column, rheumatic spondylitis, and malignant disease of the spine.

1. NEUROSES OF THE SPINE.

In a fair proportion of the adult patients referred to me for an opinion, or seen with the family physician for some obscure spinal lesion, I find an irritable spine. The pain in the back has usually been an annoying feature, a faulty attitude in standing or walking, the tenderness on concussion, have all conspired to bring about a degree of anxiety, which has for some time distressed the patient, and which finally demands of the attending physician an examination of the spinal column, and occasionally ends in a diagnosis of lateral curvature. Running the finger over the spinous processes, then over the lateral masses, he detects points of tenderness which are at least suggestive, and he naturally finds a tuberculous disease of the bodies of the vertebræ, or, what he more frequently feels called upon to name it, a traumatic Pott's disease of the spine, because of a history of injury. If he were familiar with the more recent literature of Pott's disease of the spine he would attach a different significance to the tenderness. He would naturally exclude disease of the body of the vertebra, because he would be unable to trace any connection between the suspected body and the skin so far removed, or processes spinous or transverse. The family physician is more easily annoyed, however, by the history of a fall or a strain of some kind, and not having acknowledged his firm belief in all the teachings that have grown out of the discovery of Koch, he is loath to accept any other theory than the traumatic. I offer the foregoing explanation as one reason why it is so difficult to make a diagnosis. The chief reason, however, is the lack of confidence in one's opinion, the lack of courage in one's convictions and the failure to make a thorough examination.

Again, the prominence given to the reflex nature of many of these diseases has tended to impair the observer's confidence in his own findings, and he looks for some cause in the muscles of the eye, in the functions of the ovaries, or in the condition of the genitals.

CASE I.—Traumatic neuroses of the spine. Miss T., aged twenty-two, from one of the Northern towns in this state, was referred to me by Dr. W. T. Bull, April 29, 1895. I obtained the following history: Eight years prior to this date the patient fell from a second story window in a fit of somnambulism, and on being lifted from the ground, complained of her wrist. With the exception of a little general soreness she complained of nothing else. Nearly six months later she had pain in the back, and during the following year had peculiar sensations like that of snakes crawling along her body. For the relief of this she would resort to various kinds of plasters. Three years later, in the spring, she had an attack of neuralgia, which her local physician regarded as an attack of the grip. On recovering from this she found that the back was much more painful. It was fully three years after the initial neuralgia and two years prior to the date of my first observation, that her distress was so great as to require for its relief a plaster of Paris jacket. Her report was that this did give relief, and that she was comfortable as long as she wore the jacket. On one or two occasions it was removed by way of test, but her pains became intolerable.

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[1] Read by title at the ninety-first annual meeting of the Medical Society of the State of New York, Albany, January 27, 1897.

Although the menses were not normal she was regarded by the family physician as free from any disease of the uterus or ovaries. She had complained of pains around the knee, not directly in the joint, and also in the thigh and calf muscles. She walked with a decided limp. In my examination I found the left knee from a quarter to a half inch smaller than its fellow, and much tenderness of the skin and the tissues lying directly thereunder. The thigh and calf presented the same tenderness. There was no fluid in the joint; she could extend perfectly, and could flex beyond 90° without pain or discomfort. The spinous and transverse processes in the dorso-lumbar regions were especially sensitive. I was compelled to make my examination while she was partially suspended in the swing, because she dreaded to stand even without the jacket, assuring me that if this were done she suffered pain in the back for hours. I found a little fulness in the dorso-lumbar region, or rather an obliteration of the normal curve. The column I could move quite freely, if carefully done. The tenderness was quite marked in the distribution of the nerves, as well as in the ovarian region. I had no difficulty in making a diagnosis of a neurosis of the spine with involvement of the knee, and proceeded to treat her accordingly. I made a light steel brace which could be removed several times during the day, and resorted to the cautery for the relief of pain. Within a fortnight she was very much relieved, and could go without her brace for a part of the day. About this time she returned to her home, and when I saw her again, December 19, 1895, there was little or no tenderness on concussion, none on lateral motion, but rather sharp tenderness in the lower dorsal region. She reported to me another injury of recent date, but her brace protected her and she came off with very little harm. In a letter under date of May 20, 1896, I learned that she had discarded the brace, had been wearing an ordinary corset for the past two months, had very little backache, and was delighted with the result of treatment. This case was used to illustrate the apparatus in a paper on the "Management of Irritable Spine," read before the Practitioners' Society, April 3, 1896, and published in the *Medical Record*, May 9th. In further illustration of this part of my paper, I would refer my readers to the communication to the Practitioners' Society.

While I am not able to give all the points in differentiation between an irritable and a hysterical spine, I may present an example of what I take to be hysterical spine.

CASE II.—In September, 1884, a gentleman, aged twenty-seven, applied to me for a plaster of Paris corset, stating that he had worn these jackets since 1877. I found him a robust hearty-looking individual, without any marked bony deformity. Indeed, I had some difficulty in making out any deformity. There was a certain amount of rigidity in the dorso-lumbar region, but he declared that it was simply impossible for him to get on without support. When twenty years of age, seven years prior to the date of my first note, he suffered from pains in the lower limbs and a slight spinal stiffness. He knew of no cause and did not attribute his disability to any injury. Under the advice of a distinguished surgeon in this city he got a plaster of Paris jacket, and had continued that treatment. I suggested to him a leather corset, which would amount to nothing more than a broad leathern belt about his loins, and made one for him. Six or seven years later I examined him again, with negative results. He was still wearing the leather jacket, and had, at times, worn one made of canvas. It was a matter of surprise to me that he persisted in this support, or regarded himself as at all unwell. All of his organs were pretty thoroughly examined, with absolutely negative results. This was June 5, 1891, and in May 17, 1892, he developed certain neuroses involving the genitals; indeed, I found a slight hernia on the right side and applied a truss. He was so much disturbed mentally that I referred him to my friend, Dr. Sachs, who wrote me that this was a case of somewhat aggravated sexual neurasthenia, with weakness of the genital organs. Suffice it to say that he got relief, and as late as December 12, 1895, I made him two or three canvas belts, which he uses to this day.

The difficulty of making a pathological diagnosis in a case of this kind is not to be under-estimated. If this were a case involving a suit for damages, one would naturally say that it was purely hysterical, and that the patient would get well just as soon as a verdict was rendered, but this gentleman has never been able to assign any cause to his trouble; has never nursed any suit for damages.

We are so prone to attribute most of the cases of railroad spine to hysteria, that I shall present one or two by way of illustration.

CASE III.—On March 10, 1891, Dr. J. A. McCreery of this city referred to me a man, aged thirty-two, who was severely injured in a tunnel accident two and a half weeks prior to that date. In the accident he fell backward, striking on an iron casting. He was able to walk about for three or four hours after the accident before being compelled to seek rest. From that time he complained of more or less pain, and was unable to walk without considerable effort.

I found him well developed but quite distorted in body. There was an irregularity of the spinous processes of the last dorsal, and the first, second, and third lumbar vertebræ. In this region he was exquisitely sensitive. The erector spinæ muscles on the left side were more prominent than those on the right. He stooped forward and the natural position was a slightly bent one, and when he attempted to stand more erect this little irregularity of the spinous processes still existed. There was pain on concussion and a slight antero-posterior curve in the region just mentioned. He was also sensitive in the iliocostal space, and attempts to turn himself from side to side caused pain, so he stated, and so he manifested by his expression. There was nothing in the iliac fossa, except apparent tenderness and this was superficial. Hyperextension of the thigh was made easily on both sides, but there was more psoas resistance on the right. There was no impairment of functions at the hips or the knees, but tenderness in the left iliocostal space, as compared with the right. I recognized also resistance in this region to the pressure of the fingers, and could easily map out what seemed to be a distinct tumor. I was, however, unable to satisfy myself of the existence of any bone lesion, and advised the cautery quite freely in the sensitive region. Six days later he reported and I could note about twenty-five per cent. improvement, and advised him to resume work. Dr. McCreery had found him, a day or two after the accident, doubled over very much, and quite unable to work, so he applied a plaster of Paris jacket, which afforded some relief, and at the doctor's suggestion, I renewed it on the 20th of May. Two days later the patent reported himself as greatly improved; could walk more nearly erect, and did not have so much pain or distress in the posterior parts of the thighs. He had already begun a suit for damages, and as requested, I gave a certificate on the 25th of June to his attorney, to this effect: I had regarded his case as one of contusion of the back and loin, but he had not responded as promptly to measures of relief as I had hoped he would, and I now found him suffering from symptoms that pointed toward Pott's disease of the spine, although I was unable to demonstrate the conditions. I gave it as my opinion that he would require protection treatment for at least eigh een months or two years, and that I was unable to state positively what the outcome would be. The treatment adopted was very thorough and I kept him well supported in jackets, employing the cautery two or three times a week, and yet, by the 8th of September, 1891, I was unable to confirm the diagnosis and to give a favorable prognosis. It is only fair to state that a settlement of the suit had not been reached. On the 15th of September, 1891, I reported his case in a paper: "The Early Diagnosis, the Best Treatment in Pott's Disease of the Spine," read before the Canadian Medical Association in Montreal.

From July 5, 1895, I saw him occasionally, more frequently during the years 1891 and 1892. I employed by way of treatment, the corsets, cautery, and potassium iodid. In March, 1892, he had some peculiar neuroses, such as twitching of the face, pains in the lower limbs, cold feet, cold ankles, etc. About this time he effected a settlement with the company and went into business. A few months after this it was reported to me that he was doing well, that he was working pretty much all day, and that he was able to get on without the support of the plaster jacket, but with a corset heavily reinforced with steel. When I examined him last, July 5, 1895, his spinal column was still irritable and sensitive. He had no longer any reason to expect any relief from the company. Indeed, he was not embarrassed by a lawsuit. During the past year I have seen him but have not made an examination. He is still wearing some sort of a support, but is attending to his business and will probably make a good recovery.

2. RHEUMATIC SPONDYLITIS.

In employing the term spondylitis, I wish it understood that the lesion is a periosteal thickening along the lateral masses and involving the foramina of exit for the spinal nerves. It may involve more than the foramina by extension, and produce ankylosis, more or less complete, of the column. The periostitis is usually rheumatic. The term "spondylitis" was used a great many years ago by Dr. Julius Braun, who lived at one of the bath establishments in Europe, and who wrote a very elaborate article on this subject. The cases he reported had been regarded as cases of irritable spine, but by adopting antirheumatic treatment, coupled with vigorous hydrotherapy, he was enabled to effect a cure in a large percentage of his patients. The process, therefore, is not a tuberculous one, and does not involve the bodies of the vertebra.

Case IV.—A gentleman, fifty-two years of age, was referred to me by the late Dr. Alfred L. Loomis on November 15, 1890. His symptoms dated from October, 1889, about which time he had a severe cold, and was very active in business. Two months later he was severely chilled while traveling in a cold car, and suffered at once from rheumatic pains. Indeed, he was confined to his room for a period of two weeks. A month later he had an attack of the grip, and was treated for rheumatism. During the following spring he sought relief at Clifton Springs, then at Fortress Monroe, and later at Nantucket. During the summer he got some relief, but, returning to his home, was in a wreck on the railroad, and was considerably bruised. It was fully two months after this that he had a return of his old symptoms. He complained, in addition to this, of a girdle pain just below the mammary line. Dr. Loomis himself looked upon the case as one of rheumatism, but for the spinal symptoms referred him to me for treatment. When I examined him he was in fair health, but walked with his head bent forward, and very carefully. He took short steps, and seemed to be continually guarding against concussion or jar. There was a prominence of the spinous processes of the eighth and ninth dorsal; there was tenderness on pressure and on concussion. There was a point of tenderness over the vertebra prominens, but he was able to move his head very freely, and pressure against the anterior portions of the vertebræ, through the pharynx, did not give rise to any pain. I was a little uncertain myself as to the nature of the disease for which he sought relief, but there were enough symptoms and signs present to warrant me in providing a fixation apparatus, and in employing the cautery. A few days later I found an area of soreness and tenderness along the outer side of the leg, just below the head of the fibula. On December 12th I saw the patient in consultation with Dr. Loomis, and both he and I questioned the existence of Pott's disease. The deformity, at this time, was not so marked. We agreed upon the potassium iodid and cod-liver oil. The brace afforded him some relief.

I heard from him by letter the latter part of January, 1891, and the report was excellent. On the 4th of March he was much improved, but he still complained of pain about his left limb and foot. The fulness in the spinal region, which had been noted at the time of my first observation had entirely disappeared, but the tenderness persisted. The cautery was employed, and instructions were given to have it continued at his home. I saw very little of him during the year 1891, but on several occasions I found a decided improvement. He was unable to dispense with the brace, but in 1892 was about as well as ever. He called upon me October 6, 1893, to report himself as perfectly well, and able to travel very long distances. I have heard from him from time to time, up to the present, and he still continues well, so I feel positive about the diagnosis.

Case V.—A gentleman, thirty-seven years of age, was referred to me by Dr. W. M. Polk, during the close of the past year. Two years prior to this he began to have some trouble with his back. His urine was acid and contained uric acid in large quantities. A year after the beginning of these symptoms he was rather stiff in the back, and walked like an old man. He was at this time examined by a distinguished orthopedic surgeon of this city, and on the strength of the rigidity of the column, and marked deformity, the diagnosis of Pott's disease was made, so the patient reports. A grave prognosis was given at the time, but treatment was not accepted. Instead of using the apparatus, he went to Carlsbad, where he obtained much relief. During the past year he has improved much, has very little deformity, holds himself much straighter, and attributes much of his relief to a course of massage. I found a slight anteroposterior curve from the middorsal to the third lumbar vertebra, but it was not angular. There was no tenderness on concussion; no pains in the course of the limbs. There was no reflex spasm in the psoas or iliacus when hyperextension of the thighs was made. I was unable to make a diagnosis of Pott's disease, but rather of rheumatic spondylitis, and later reports seemed to confirm it.

In arriving at my diagnosis I, of course, had the benefit of his history, and of his amelioration, without orthopedic treatment. Some cases present such marked evidences of rheumatism about other joints that one can very easily make a diagnosis where the spinal column is involved.

3. FRACTURE OF THE SPINE.

I think one is seldom at a loss to make a diagnosis in a case where a fracture has occurred, because of the history of great violence, even where the resulting deformity presents a bosse characteristic of Pott's disease. For example, take the following:

Case VI.—A stout, robust-looking man, thirty-five years of age, presented himself at my clinic, at the College of Physicians and Surgeons, on the 27th of April, 1896. The history he gave was that up to the latter part of 1891 he was perfectly well and quite active. In trying to couple some cars he was caught between them and suffered a slight injury, but there was no signs pointing to injury to his back and a month later he was at work again as night watchman. He continued well until the 19th of September, 1894, when he was thrown from a carriage and fell on his back. The fall dazed him for about five hours, during which time he was practically dead. He was removed to the hospital, but there seems to have been no diagnosis made. The patient himself states that his back was not examined, but he remembers distinctly that as soon as he recovered consciousness his limbs were absolutely palsied as to motion and sensation. The line of anesthesia was just below the umbilicus. There was retention of urine, and the bowels were moved by enema. It was fully three months before he was able to tell when he had a movement, except by the odor. Bed sores formed during his treatment, which extended over a period of six months. The reflexes became exaggerated during convalescence, and about seven months from the time of injury he was able to stand. Three months after the injury, however, he began to have control of his bladder and rectum. It was fully a year before he was able to walk about, and then the limbs presented a good deal of tremor, with reflex spasm, which was chiefly confined to the left lower extremity. He never wore any apparatus and never had any treatment directed to his back.

At the time of my examination there was a bosse extending from the tenth dorsal to the sacrum. The outline of this bosse corresponded exactly with that of deformity after Pott's disease. There was no spinal tenderness, he was free from pain, and there was no tenderness on concussion. The left foot was held in marked equinus, toes in hyperextension, and when he bore his weight on this limb it rested on the distal ends of the metatarsal bones. He could freely flex and extend the right thigh and right leg, but was unable to flex the left thigh unless he grasped the posterior part of it with the hand, and proceeded to "unlock" himself. After this maneuvre he could flex his thigh up to 90°, and could extend, but in the act of extension the muscles were thrown into a state of tonic spasm. From a number of other similar symptoms it was concluded that there was some pressure on the nerves supplying the left lower extremity, and that he had a spastic monoplegia due to compression.

The course pursued by the paraplegia in the case just reported, does not differ from that in the majority of cases, although the prognosis must depend upon the extent of the cord lesion. It is a good plan, in my judgment, to attempt reduction of the deformity at once under an anesthetic, if need be, so that the pressure symptoms may be avoided or promptly relieved. I do not enter into the question of operation, although I firmly believe that an operation done very soon after the injury is productive of enormous good to the patient.

4. MULTIPLE OSTEOMYELITIS, INVOLVING SOME PORTION OF THE VERTEBRÆ.

One occasionally meets with cases of multiple ostitis where the shaft of the long bones is involved, and where one seldom finds any involvement of the vertebræ. The inflammatory process may take in one or more ribs near the vertebral articulation, and when this does occur it is quite rational to suppose that the vertebræ themselves will be involved. The following case is illustrative:

Case VII.—A medical gentleman, aged forty, was referred to me by the late Dr. Loomis, on the 24th of November, 1894, and I made a diagnosis of non-deforming Pott's disease in the dorso-lumbar region. This diagnosis was based on the fact that he had suffered two or three years with pains and aches, referable to the spine and the nerves, but I did not take into account a possible neurasthenia. He had a stiff spine, which was tender, and the pains were referred to the course of the nerves. It was exceedingly painful for him to turn over in bed or to get up and down, although there was no pain on concussion. The movements of the column from side to side or forward and backward gave him pain. I advised a plaster of Paris corset, supplemented by the use of the cautery. He did not come under treatment at this time.

It was reported to me on July 10, 1895, that an abscess had appeared over the head of the tibia, right side, and that an operation had been done in March for the relief of this abscess. The sinus was thoroughly curetted, but was not relieved. Indeed, two sinuses existed at this time. There was already an abscess in the posterior femoral region and also in the left lumbar region. I had an opportunity of examining him on the 17th of July, at his home in New Jersey, when I found his right leg flexed at an angle of 90°. There was a large ulcer on the outer side of the fibula, with the bone almost in sight. It could easily be recognized by means of the probe. Indeed, the probe passed the denuded bone of the fibula and enabled us to discover denuded bone in the head of the tibia. The knee-joint itself seemed to be normal so far as appearance went, but there was an abscess above the knee, along the outer and posterior aspect, already discharging. Just below the anterior superior spinous process, and on the outer side of the ilium, there was a small tumor, which had lasted, they reported, for some weeks. The hip-joints seemed normal. Over the sixth or seventh rib, right side, about the middle, was a sinus which led to denuded bone. In the left iliocostal space, and a little to the posterior border of it, there was a good-sized fluctuating tumor. The spinal column still presented no deformity, but it was quite stiff. I learned at this visit that he had worn a spinal brace, applied by an orthopedic surgeon, for a period of two months, but on advice of his family physician it had been discarded.

On August 2d, assisted by Dr. Bull, and his physician, Dr. Terriberry of Paterson, I exposed the head of the fibula, right side, and removed it by means of a chisel. A focus of disease was found in the head of the tibia, and this was thoroughly curetted until hard bone was reached. This focus did not encroach upon the articular cartilage; indeed, there was healthy bone between the focus and the cartilage. Sinuses and abscesses in this locality were pretty thoroughly curetted and scraped, while the abscess above the knee was treated in the same way. The sinus over the rib was enlarged, when it was found that fracture had taken place at some time, but that union had not followed. The rib was resected for about one inch. The lumbar abscess was aspirated and about 4 ounces of pus evacuated. Further operative procedure was withheld for the time being. The patient rallied very well, and about two months later returned to his home.

October 3d, a second operation was performed, with the same gentlemen present, and on this occasion I made an incision over the lumbar abscess, just over the iliocostal space, extending it down into the sac, which contained a moderate amount of seropurulent matter. The track of this abscess extended upward toward the lateral masses of the vertebræ, to a point complained of as the location of a slipping sensation. The latter was well explained by extending the incision upward several inches, across the spinal column, where I finally reached necrotic bone about the articulation with the spinal column of the eighth and ninth ribs, where the ninth rib was found extensively eroded. After removing the periosteum which remained on the anterior aspect, I cut away the rib, leaving only about one-third of the entire bone. When the portion resected was removed, a purulent sac was found in front of the rib, and this was thoroughly cleansed. The articular facets and transverse processes were eroded and crumbled easily, so that by curettage, drainage was found to be pretty thorough. The incision was carried up still further, and the eighth rib, at the articulation, was treated in the same way. The neurosis involved the posterior segments of the vertebræ, especially those on the left side. The dura was not opened. It was noted on the 15th of October that he had had no temperature whatever since the operation, that his wounds were healing, and that he was moving his knee much better. During the latter part of the year, and indeed throughout the greater part of 1896, the patient made slow but steady progress.

Last summer the abscesses about the knee were so extensive that the limb was amputated about the middle of the thigh. The wound healed within a short time and he seemed to improve. In December, however, he presented signs of pulmonary tuberculosis, and shortly before Christmas he expectorated a large quantity of pus, which gave him great relief. The pulmonary signs proved to be those of an abscess, extending from his spinal column into his lung, through which it broke quite recently. It is reported that he is doing very well, is sitting up, but that two or three sinuses over the spinal column are still discharging. This case was indeed a very instructive one, apart from the keen interest felt in the case by his professional brethren.

The osteitic process, of course, has been proved to be tuberculous in nature, but it is curious to note that the compact structure of the bones was involved rather than the cancellous portion. Those of us who made a diagnosis of Pott's disease of the spine were in error, as the process did not involve the bodies of the vertebræ. It is perhaps to be regretted that radical measures were not undertaken sooner, but with the multiple lesions, it is quite difficult to see now how all of these foci could have been thoroughly removed. The two operations which Dr. Bull and I performed were certainly radical, but we were obliged to leave one or two abscesses, which have since disappeared. The presumption therefore is that the bacilli were induced to colonize in other parts of the body, and that our efforts have been of little avail.

5. MALIGNANT DISEASES OF THE VERTEBRÆ.

In approaching this subject I feel that it is difficult to lay down any hard and fast rules by which one may recognize malignant disease in its early stages. It is true that the disease, as a rule, attacks most frequently the female sex, and that the pre-existence or co-existence of a mammary tumor is sufficient to put us on our guard. Sometimes, however, the existence of this tumor is overlooked. The persistence of the pains in the course of the nerves which pass through the region involved, ought to, at least, suggest malignant disease, even when there is no mammary tumor to guide us. There are so many cases, however, where the tumor has been removed, and where a long period has elapsed between the removal of the tumor and the appearance of the first spinal symptoms, that one hesitates to make a diagnosis of cancer of the vertebræ until an opportunity has been afforded for several examinations. A few cases may serve as illustration.

Case VIII.—A lady, aged forty-five, came under my care on the 21st of July, 1893. I found her in bed with a pretty sharp deformity in the dorsal region. There was paraplegia of recent origin, and I made a diagnosis of Pott's disease. She told me that two years prior to the date of my examination, she had a sudden jar by falling down one flight of stairs. For two or three days after this there was a little stiffness, which finally passed off. It was a year later that she began to complain of pain in the right side, in the neighborhood of the free ribs, but the pains did not extend down the thigh. She did not think enough of these pains to consult a physician, but continued with her household duties until she found it rather difficult to get about. She was not able to clear the floor well with her feet. It was only recently that she had seen a physician, but her back was not examined and her pains were regarded as rheumatic in nature. She was in bed for a period of sixteen weeks, under treatment for rheumatism. She got up and tried to walk but the pains were so great that she took to her bed again, and five days before I was called she had lost the use of the lower limbs. It was exceedingly difficult to make a satisfactory examination by reason of the great suffering induced by attempts to move from side to side in bed. The lower limbs, as before stated, were completely paralyzed. She had incontinence of urine and of feces, to a moderate extent. There was a bosse in the mid-dorsal region, about an inch in height. Her abdomen was large and somewhat distended.

Admission to the hospital was soon secured, and with considerable difficulty, a few days later, I succeeded in applying a plaster of Paris jacket. While in suspension the deformity receded to a marked degree. That afternoon she began to move her toes and the relief to the paralysis was most pronounced. On the following day she was able to extend both feet and toes, and was very comfortable in the jacket. The urine, however, was retained, and had to be drawn by catheter, the pains persisted and I still did not give to the symptoms the proper interpretation. On the 4th of August, 1893, I made a plaster of Paris corset, and after the suspension the urine was voided naturally. The specific gravity was low, there was no albumin, no sugar. At this time she was taking pretty large doses of the potassium iodid and the cautery was employed every other day. The hospital treatment was continued throughout the summer during my absence, and the limbs improved very markedly, but the patient was still fretful and irritable at the close of the season and complained of great pain. I then began to surmise that she suffered from malignant disease of the spine, although there had been no breast tumor of any kind, nor had she been subjected to any operation. She was discharged in November, 1893, and gradually failed, dying on the 5th of December.

It is interesting to note that in the latter part of November she had a most unquenchable thirst, drinking large quantities of water, and still not satisfying her thirst. She had polyuria and her pains were so great that large doses of morphin were required for her relief. Autopsy was not secured.

Case IX.—An unmarried lady, aged thirty-two, from Denver, consulted me July 26, 1894. She had been referred for Pott's disease of the spine, and the symptoms had extended over a period of twelve months. She had travelled a good deal in search of relief. At the time I saw her I was able to make a very careful examination, learning that six months prior to this date a nodule was removed from the right breast, which operation included the axillary glands. The report brought me was that microscopic examination showed the tumor to be benign, but I questioned very much the truth of this, inasmuch as the pains she complained of were so excruciating. I was willing, however, to treat her symptoms, and did my best to give her relief by means of a jacket, cautery, and the milder narcotics. The case, however, progressed from bad to worse, and on the 6th of December I referred her to Dr. Wm. B. Coley for treatment by erysipelas toxins. Two or three weeks later the doctor reported that he had succeeded in alleviating the pain, but that the disease seemed to be advancing and that the case was practically hopeless. She died some weeks later and the case has already been reported by Dr. Coley.

I had no difficulty in making a diagnosis in the last case, but the following taxed my diagnostic powers to the utmost, and I am free to admit that I made an error. Just why I should have done so I am at a loss now to understand, because the signs were unmistakable.

Case X.—A lady, aged thirty-two, was placed under my care on the 13th day of October, 1895. The history she gave was the following: Four years before, at the time of her marriage, she was hearty, well-nourished, and in excellent health. About a year before her marriage she had the grip, followed by pneumonia, from which she made a slow but satisfactory recovery. Twenty days after her marriage she had a return of the grip, which was very severe, lasting two weeks. Five months later she had an attack of what was called appendicitis. This was in the summer of 1892. During that fall and winter she was comparatively well. In the spring of 1893 she began to have trouble with her nose and antrum. A number of polypoid growths were removed. She suffered much from what was called asthma or bronchitis during the spring and summer, extending even into the winter. In the spring of 1894 she was much improved. In the fall of 1894 her attacks of asthma recurred. Up to this time she had had no pain in the back. Her menstrual functions had been regular all the while, but she suffered much from constipation. Her asthmatic attacks proceeded during the winter of 1894 and 1895.

On the 15th of March, 1895, she had pain in the abdomen, girdle-like in character. Following this came long periods when she was much nauseated; sometimes for three or four weeks off and on. During these periods her bowels were obstinately constipated and she suffered from intercostal neuralgia. In the latter part of April a large mass of feces was removed by mechanical means. In May an attempt was made to walk, but she was quite stiff, and would complain bitterly of pain in the back, which pain was also referred to the hips. In June she had much difficulty in climbing stairs. The plaster of Paris jacket was used during the summer, but the suffering was unrelieved. She became more and more emaciated and at the time of my examination her condition was truly pitiable.

She was quite hysterical, and it was difficult to secure an examination by reason of the great tenderness on any movement, active or passive. The spinous processes of the upper dorsal vertebræ were unusually prominent, and there was a general anterior curvature of the spine in the dorso-lumbar region, but no distinct knuckle. The limbs were much emaciated but retained their power. I suspected Pott's disease of the spine, and although I found the ilium and ribs rather irregular and tender on pressure, I attributed these conditions to extreme emaciation. My diagnosis was extreme neurasthenia, with aggravated irritable spine. It occurred to me that a trained nurse was what she needed more than anything else, so I provided one, and suggested that a local physician be called. She remained under my observation until the 1st of December, when I met Dr. Van Santvoord, to whom I had referred the case. The doctor had previously written me after his first visit, which was on the 19th of November, as follows:

"I suppose that a tumor of the breast, lasting eighteen months, softened nodular ribs, and thickened pelvic bones, are not likely to result from anything but malignant disease, probably carcinoma."

When we met at the bedside I recalled the points which Dr. Van Santvoord had mentioned in his letter, with the exception of the breast tumor. I had not examined the breasts, nor had the patient or her husband at any time ever suggested to me that there was anything wrong about these organs. I learned on this date that this tumor had been under observation for a long while, and that its removal had been advised. I had nothing to do but admit my error. The patient died on the 12th of December.

Case XI.—With this case fresh in my mind I was called to see a patient, a lady, aged twenty-eight, on the 25th of August, 1896, in order that I might give treatment to a deformed spine. There was a well marked bosse in the dorsal region, and a history that the mother of the patient had, for several years, an epithelioma of the nose, that the grandfather had died of some "cancerous affection." The patient herself had had a weak back from girlhood, and had complained more or less from time to time. She was married at fifteen years of age, never bore children, and two years prior to the date of my seeing her she was curetted for some uterine disorder. At the same time the os uteri was dilated. She told me that at this time a small nodule appeared in the right breast, which had gradually increased, and which had been pronounced by her physicians to be carcinoma. In February, 1895, the back began to be painful. She remained in bed from March until July, under treatment for rheumatism. She sailed for Europe in July, but placed herself under treatment in Boulogne, France, shortly after her arrival. The spinal deformity was recognized and a plaster of Paris jacket was applied, which jacket gave her relief. When I made my examination there was a tumor in the right breast, involving pretty much the whole of the organ. It was nodular and hard while the nipple was retracted. The axillary glands were not enlarged. She had a marked kyphosis extending from the mid-dorsal to the lumbar vertebræ. This deformity had been present for about six months. Dr. George T. Harrison saw the case in consultation with me and agreed as to the nature of the trouble. I made a diagnosis of malignant disease of the vertebræ, probably carcinoma. She was fitted with a corset jacket, and went into the country, returning about the 23d of December, and when I saw her on the 25th there was a rapidly increasing paralysis of the lower extremities, attended with retention of urine. On the 19th, numbness invaded the lower limbs, and the pain was aggravated. I learned that she had been treated by a Boston physician with some cancer remedy for over a year. Her case was complicated also by pregnancy, which made it all the more difficult to manage, even if there had not been any malignant disease. There was nothing really to do for her paralysis. She died on the 30th of September.

6. TREATMENT OF POTT'S DISEASE.

I propose, under this heading, to present a few cases representing different types of the disease, and will leave the cases to speak for themselves. It will be seen, however, that the details of treatment are very simple, *viz.*, to secure good fixation of the column, to prevent an increase of the deformity, and to rely upon exercise and out-of-door life as much as possible.

Case XII.—A gentleman, aged thirty, was referred to me December 13, 1894, by Dr. M. Allan Starr. He reported that for five years he had walked peculiarly and had been awkward in his gait. His friends had observed a wasting of the limbs. In the spring of 1894, he had typhoid fever, and while convalescing complained of a soreness in the iliac fossa, left side. He made a good recovery, and it was not until within three weeks prior to his visit to me that he complained of pain in the back and pelvis. The pain was most marked in the pelvis, and especially on the right side. Riding in a wagon of any kind added to his discomfort. If he walked about he was careful to avoid concussion. He presented a well-deformed antero-posterior curvature of the spine, from the mid-dorsal vertebræ to the sacrum; was tender to pressure, and concussion induced pain. His abdomen was retracted a good deal and he stood awkwardly, complaining that he could not "straighten up" well. There was little tenderness in the iliac fossa, left side, but no tumor. His thighs were weak, but the reflexes were not exaggerated.

I made a diagnosis of osteitis of the vertebræ, probably tuberculous in nature, and employed the cautery, and immediately after this some adhesive strips over the bosse. Advised him to have a plaster of Paris corset made if he did not get prompt relief. On the next visit, about a week later, I made him a plaster of Paris corset and applied it within a few days thereafter. January 8, 1895, he had no pain in the back, walked quite erect, and felt much improved. February 17th, was quite straight, had had no trouble for a month or more, wore the corset with comfort, attended to his duties, that of a groceryman in a small town in New Jersey, and had been free from pain or annoyance. I saw very little of him from that date, but had a report from him on the 7th of February, 1896. From this I learned that he was quite well and was cured.

Case XIII.—*Dorsal Pott's.*—A lady, aged thirty, was placed under my care November 3, 1887, by Dr. Boyd of Savannah, Ga. Her history was a very long one, extending over two or three years. She was treated for rheumatism, for uterine disorders, etc., etc. It was not until she came under Dr. Boyd's care that a diagnosis of Pott's disease was made. I attempted to fit her with a Taylor posterior spinal assistant, but she could not, for some reason, get accustomed to it; did not get the necessary support to enable her to walk well, although I made special efforts to get her properly fitted, and the apparatus seemed to me to meet every indication. After two weeks' trial I abandoned the brace altogether and applied the plaster of Paris jacket, cut down for a corset. The bosse, which was rather prominent, diminished a little on suspension in the swing. A good fit was obtained, and she went home on the 1st of December, standing the trip very well. A report by letter on the 17th of February, 1888, was encouraging, and a report from the doctor in April was confirmatory of the good result thus far obtained. The corset failed to give her the support after six months, as it had broken in one or two places, so she returned on the 29th of August, 1888, for further treatment. I made an attempt to fit her with the posterior spinal assistant again, but she was with difficulty induced to wear it, and was anxious to have the plaster corset renewed. We persisted, however, in the use of the apparatus, and she returned to her home at the end of a month. The reports were not so satisfactory during the next twelve months, and in the latter part of August, 1889, she returned, having spent several weeks at the Hot Springs in North Carolina. She had been bedridden for eight or nine weeks, and was thoroughly dissatisfied with the steel brace. A few weeks prior to her return there developed a fulness in the upper portion of the left thigh. I found a good-sized abscess, which was undoubtedly spinal. It was aspired, and seventeen ounces of pus withdrawn. During the two weeks following this I made three or four jackets before I got one at all satisfactory. About three weeks after the first aspiration I repeated the procedure, and withdrew thirty-six ounces of pus. Two weeks later thirteen ounces of pus was withdrawn and three and one-half ounces three weeks later. About this time the sac was pretty thoroughly empty and I kept the walls closely adherent by means of strips of rubber plaster. At the end of a month the sac had partially refilled and I aspirated again, getting this time three and one-half ounces. Shortly after this she returned, very much improved in every respect, and able to walk much better.

I saw her again February 21st, 1890, about two months after the last aspiration. She favored the left limb a little in walking, but I failed to detect any fluctuation in the iliac fossa, or on the outer side of the thigh. Her health improved and she became much more active, but it was not until March, 1892, that I detected a little fluctuation on the outer side of the thigh, in the site of the old abscess. Two ounces of pus were withdrawn and again on the 18th of April about one-half an ounce. Dr. Boyd wrote me in June, 1892, that he had succeeded in removing about four ounces of thick, shreddy pus. He thought at this time that she was developing pulmonary tuberculosis, but she went to the mountains and her health improved, the cough disappearing. I did not see her until the spring of 1894, when she seemed so far recovered that I urged her to remove the corset at night, but she objected to this on account of a dread of the return of the disease, so at this time I made a wood corset, after which there was no relapse of any kind, and during the year 1895 she continued to wear this support without any interruption. The latter part of 1895 I induced her to dispense with the wood corset and wear an ordinary corset, which I had had made especially to fit her back, and which she wore night and day. She came to the city in September, 1896, in order to have massage, and to "learn how to sleep" without the corset.

On October 17, 1896, I had Dr. E. G. Janeway in consultation, and he was unable to find any pulmonary lesion. There had been no recurrence of the disease. This, to me, had been a most interesting case, as it presented features at times that seemed almost beyond relief. The patient herself was very eager to follow the instructions closely, and the disease, I am sure, has undergone complete resolution. She wears an ordinary corset by day, and none at night, is able to attend to her household duties, can travel at will, and presents really very little deformity. The upper portion of the body seems to have developed and the deformity to have markedly receded. I have presented this case in detail to demonstrate what can be done by careful and repeated aspirations where the abscess is suitably situated, as well as the efficiency of a good splint to the back. She has been under my care, with only one interruption, from 1887 to the present time, nearly ten years.

I want to lay before you a case where the abscess was treated differently, and where the result promises to be equally good:

CASE XIV.—A gentleman, aged thirty, was brought to me for treatment on the 11th of September, 1889, by Dr. Glassford. He had complained for two or three years of his back, and during the winter of 1890-1891 an abscess appeared in the right loin. At the same time a second abscess appeared to the left of the spinous processes of the third and fourth lumbar vertebræ. Both were open, and when I made an examination there was a slight bosse in the dorsal-lumbar region, with a lameness affecting the right hip. I treated him by means of a plaster of Paris corset. His physician attended to the abscesses, kept them well drained and thoroughly aseptic. He has come to me from time to time for a new corset, and I think I have made him five altogether. He has attended to his business throughout. Quite recently he called and I found his general condition very good, he reporting that the sinuses were discharging a little, but that he had learned to take care of them, with the assistance of the doctor, and that his back gave him little or no trouble.

CASE XV.—A gentleman, aged thirty-one, was referred to me by Dr. Battle of North Carolina, November 7, 1895. For several years prior to this date he had suffered occasionally from a pulmonary tuberculosis involving the upper portion of the left lung, but under the influence of good air and hygiene, the process seemed to have been finally controlled. During the early fall he suffered much from lumbago, finding that he was unable to ride or to get about with any degree of comfort. The pains became quite severe, and at the time I saw him there was a marked kyphosis in the dorsal-lumbar region, the apex being in the lumbar. The pains were referred to the posterior aspects of the thighs. He was unable to stand erect, and it was difficult for him to get into an easy position. I applied a light plaster of Paris jacket as he lay prone between two tables, and from this jacket made a wood corset, which, after some little alterations, became quite tolerable. He went south the middle of December, 1895, bearing the trip well, and after a month the improvement was very marked. Toward the end of January he had a recurrence of his pulmonary symptoms, general condition grew worse, and early in February developed tubercular meningitis, from which he died on the 10th.

I have reported this case in order to bring out more prominently the importance of an early diagnosis, especially when the disease occurs in a patient already the victim of pulmonary tuberculosis. The necessary impairment to health, by reason of long suffering and anxiety, is decidedly in favor of a recurrence of pulmonary symptoms. After the deformity has presented itself, and after many weeks of suffering, one cannot expect to accomplish much by any treatment, but even in a case as desperate as this, the relief from a good fitting corset was most pronounced.

The remaining cases which I shall present illustrate the effect of immobilization in cases of Pott's disease where compression paraplegia exists.

CASE XVI.—A gentleman, aged forty-eight, was referred to me by Dr. E. G. Janeway, on the 3d of October, 1895. The doctor himself had made a diagnosis of Pott's disease a day or two before he came under my observation. The history was that all of the family had died of tubercular diseases, although he himself had been quite well and active in business, up to the invasion of the present disease, with the exception, perhaps, of pneumonia, some twenty years ago, which affected the left lung, and which was followed by pleuritic adhesions. In the fall of 1894, while returning from Europe, he suffered from what he described as "body pains." These pains were confined to the pectoral muscles and the ribs, but they were not very severe, and did not cause him much annoyance. On reaching home they gradually disappeared, and in February, 1895, they returned with a little more severity. One night, about the middle of March, he had a very sharp attack of pain, attended with fever, and he "ached all over," being treated for *la grippe*. At the end of three or four weeks he was sent south, but the temperature was exhausting, and he remained only a month, obtaining no relief whatever. The pains at this time were griping, and were below the mammary region on each side. He sought relief at the Hot Springs of Arkansas, and took a full course of treatment, but without effect. Soon thereafter the pains began to assume a girdle-like feature, and he found that he could not laugh or sneeze without pain, and was compelled to lie upon his back most of the time at night. He took to exercises of various kinds, in order to "work his rheumatism off." Later he sought relief at an "osteopathic" institution in Missouri, and left unimproved. In the latter part of August he had at his home an attack of what was called pneumonia, or pleurisy, and was in bed for a few days, at which time he was examined by distinguished surgeons, who differed as to his disease. One especially, of world-wide fame, pronounced the disease tubercular, while another pronounced it rheumatism or gout, and, as the latter was a medical man, his advice was taken. He urged dumbbells and exercises. An orthopedic surgeon is reported to have pronounced his case Pott's disease. He finally went to a sanitarium in the northern part of this State, and two weeks after beginning treatment began to feel a peculiar sensation in his lower limbs, and a tingling in the thighs. The spinal pains increased in severity, so he came to the city and consulted Dr. Janeway.

I found a deformity involving the eighth, ninth, and tenth dorsal vertebræ, exaggeration of the patella tendon reflexes, a typical spinal gait, with pains in the lower part of the back and thighs. With the history which he gave and with this cursory examination, I had no difficulty in confirming Dr. Janeway's diagnosis. He was very desirous of getting something that was light, so I made him a wood corset. In fact, I made him two or three wood corsets, but insisted on the recumbent posture and employed the cautery and potassium iodid. The wood corset was not satisfactory, and in December I abandoned this and made him one of plaster of Paris. The first one did not fit well, so I made a second, and he began to improve from that time forth. The subsequent notes are but a record of continued improvement; from a helpless individual, he became quite active, and now attends to business, going from one city to another without inconvenience. I occasionally see him when it is necessary to make a new corset, but these articles last a long time, and hence there is very little active treatment.

Case XVII.—A gentleman, aged twenty, was placed under my care May 30, 1892, by Dr. L. M. Yale. In 1884 he first showed signs of Pott's disease, and came under Dr. Yale's care two or three months later, when a plaster of Paris jacket was applied. He lived at some distance from the city, and the jackets were not renewed as frequently as the doctor desired. In the spring of 1891 he showed signs of weakness in the limbs, and his gate was distinctly ataxic. At this time he was treated in Boston, where the opinion was given by a most excellent surgeon that his ataxia was not due to compression myelitis. It is fair, however, to state that this gentleman, after observing the patient for a month or two, changed his opinion. In view of this apparent uncertainty, the patient became discouraged, and at a time, too, when his paralysis was increasing. At the time I saw him he could barely walk a few steps. He could lie on the couch, however, and move his limbs from side to side and over small ranges, but the muscles were very weak. All the reflexes were enormously exaggerated. The deformity of the spine was not great, and a Taylor brace, which seemed to fit him very well, was deemed quite efficient. I applied a plaster of Paris jacket, with head spring, made free use of the cautery, and gave potassium iodid in increasing doses. By the time he really came under treatment, June 10th, the paraplegia was about complete. Treatment was continued at his home by the family physician, who was most painstaking, and who carried out every instruction to the letter. Reports were received from time to time which indicated a marked improvement. I saw him on the 20th of April, 1893, after about eight or nine months' treatment. All of his muscles in both lower limbs responded well to voluntary efforts. He moved his limbs about without tremor, the reflexes were not very much exaggerated, and he could stand without any assistance, but I did not prolong the examination, for fear of a recurrence of symptoms. The improvement has continued up to the present time. I have made for him several plaster jackets and two or three wood corsets. During the last year he has been going about, has ridden a bicycle on one or two occasions, and has suffered no relapse. Quite recently I have made an examination, to find his return of power about complete. He is wearing a convalescing jacket. From time to time he is indiscreet in the amount of exercise, but a two or three days' rest is sufficient to bring about complete restoration.

SCARLATINIFORM ERUPTIONS FOLLOWING OPERATION OR TRAUMATISM.

By FRANCIS R. PACKARD, M.D.,
OF PHILADELPHIA.

My attention was first directed to this subject by the occurrence of two cases in the wards of Dr. John Ashhurst at the Pennsylvania Hospital. I am indebted to him for permission to refer to them.

Case I.—A. M., white, female, aged 2½ years. Necrosis of the metatarsal bone of the great toe. Two days after admission the diseased bone was removed. Twelve hours subsequent to the operation her temperature began to rise. It reached 105° F. twenty-four hours later, when a rash appeared, which was universal, bright scarlet, and not punctated. The throat was very red and sore and the tonsils swollen. There was considerable doubt as to the diagnosis, but on the second day after its appearance the rash disappeared coincidently with a rapid decline of the temperature to normal. There was no desquamation.

CASE II.—W. H., white, male, aged five years. Empyema. His illness dated back four weeks prior to admission. Sixteen days after his entrance to the hospital the chest cavity was opened and drained (Estländer's operation). The patient did perfectly well until the fourteenth day after operation, when his temperature went up to 103° F., the pulse became very rapid, and a faint, universal erythematous flush made its appearance. His throat became much reddened and very sore, and his tongue presented the typical "strawberry" aspect. He was promptly isolated. On the third day after its appearance the rash disappeared without any subsequent desquamation. There was no albuminuria. The case did well, and went on to recovery without further incident.

In neither case could any history of exposure to scarlatinal infection be found, although diligently sought for.

We see here two instances of scarlatinoid eruption following a surgical procedure, and apparently having a direct relation to it. In each instance the case ultimately proved not to be scarlatina, but not until there had been sufficiently suspicious symptoms presented to render the diagnosis very doubtful, and to throw a very heavy responsibility on the shoulders of the attending surgeon. No surgeon would knowingly omit any precautions which would prevent an outbreak of scarlatina in his wards, nor at the same time would he be willing to expose a child who might not have scarlatina to the risk of sending it into an isolation ward where it might be possible for it to contract the disease from other patients.

The cutaneous phenomena which so frequently manifest themselves after the performance of a surgical operation, or the reception of a wound, resemble scarlatina so closely that the name "surgical scarlatina" has been coined to describe them. In truth, many eminent authorities have held that all such eruptions should be considered as symptoms of true scarlatina, and that the patients should be isolated and treated as the subjects of that disease. This opinion is especially prevalent among English surgeons, and numbered among its supporters are Sir James Paget and Dr. Goodhart. On the other hand, many equally prominent practitioners can be named who hold that if scarlatina does occur in a patient who has been the subject of recent operation or traumatism, it is to be regarded as a mere coincidence, and that the numerous cases of scarlatinoid eruptions which have been reported are merely transient erythemata and of no particular significance. They claim that the term "surgical scarlatina" is a misnomer and should be abolished, as, if the disease does occur under such circumstances, it has no relation whatever to the surgical condition.

In 1887 Albert Hoffa, a German writer, attempted to make a definite classification of the rashes which occur under such circumstances.[1] He divides them into four classes, as follows:

1. Those which are due to vaso-motor irritation; chiefly seen after operation on parts which have an abundant nerve supply, and occurring a few hours after operation. They resemble an erythema, or sometimes an urticaria, and disappear a few hours after their appearance. Under this head he places puerperal scarlet fever.

2. He terms the second class the "toxic erythemas." They have no prodromal symptoms, appear usually after a lapse of twenty-four hours, or as late as forty-eight hours, after operation, are accompanied by much febrile and usually some gastric disturbance. They generally present themselves as a diffuse redness, or as large isolated patches of redness with clear interspaces, appearing only on the body and extremities, and vanish in twenty-four hours without desquamation. These are the result of absorption of wound secretions, such as fibrin-ferment. They are analogous to the eruptions caused by the absorption of such drugs as carbolic acid and corrosive sublimate, or to the ingestion of antipyrin, copaiba, etc.

3. This is the class of infectious erythemas in which the eruption is but the indication of a general septic infection, and in it are included the eruptions of pyemia and septicemia. They may be erythematous or urticarial; may be diffused or in isolated patches. The eruption is sometimes petechial, sometimes pustular; sometimes it closely simulates the rash of scarlet fever. These eruptions are attributed to embolism of the capillaries with micrococci.

This classification is so simple and so eminently practical that I shall follow it in my endeavor to analyze and classify such cases as I have been enabled to gather which have been of such a nature as to cause doubt as to a true diagnosis. It should be noted first, that scarlatina is practically the only one of the eruptive fevers that has been brought into prominence in connection with traumatic conditions.

Sir James Paget, in his address on surgery before the British Medical Association in 1862, mentioned the case of a boy, who, three days after the operation of lithotomy, developed a vivid red eruption at the site of the wound and went through a typical attack of measles. In the report of the Evelina Hospital for Sick Children[2] there are notes on two outbreaks of measles among the surgical cases in the wards. The first series of cases, numbering eight in all, were clearly traceable to infection from a nurse. Six of the eight patients had recently undergone surgical operations; one had a suppurating hip-joint, and in only one was there no inflammatory nidus. It is stated that these were the only cases which occurred among some fifty children, though no statement is made as to whether any of the children who escaped contagion may not have been the subjects of operation. The second series numbered five cases, all traceable to one of their number, a boy admitted with "fits," who presented symptoms of measles a few hours after his admission. The four cases arising from this, developed—one in a case of phthisis, one in a case of necrosis of the tarsus, one in a case of pustular eczema, and the other in a boy who had been the subject of a lateral lithotomy three weeks before. From the record of these two outbreaks, Dr. Goodhart infers that a larger experience will prove that measles has the same tendency as scarlatina to develop in these conditions, but being less widely spread and less active in its contagious properties, it is not so often seen.

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[1] "Ueber den sogannenten chirurgischen Scharlach-Sammul." *Klin. Vostr.*, Leipzig, No. 292, Chir. No. 90, 1887.

[2] "Guy's Hospital Reports," vol. xxiv, 1879.

These are the only instances I have been able to find of any eruptive disease other than scarlatina following upon trauma or operation so as to exhibit in any way a relationship between the occurrence of the exanthem and the injury, and I am not inclined to think that any of these cases indicated anything more than a coincidence in their development. Civiale, who appears to have been the first to call attention to these traumatic eruptions, says that papulo-macular or petechial eruptions are not infrequently met with in patients who have undergone lithotomy. He makes no mention of a rash in any way resembling scarlatina, or any other of the exanthemata.

As regards the development of scarlatina under such circumstances, we have the reports of numerous cases in which not only did the patient present symptoms of scarlatina himself but communicated it to others; and, in addition, a large number of cases of so-called "surgical scarlet fever," in which the diagnosis of scarlatina could not be rendered so positive. But no one will dispute the importance of making an early and absolute diagnosis. When one considers what an outbreak of scarlatina in a hospital means, he certainly will run no risk of incurring it through an error of diagnosis.

The question naturally arises as to why scarlet fever and not the other exanthemata should be predisposed to, and why it should be simulated under such circumstances; and here we are confronted by the fact of the frequency of scarlatiniform eruptions in conditions in nowise allied to scarlatina. Thus, the various drug rashes (copaiba, belladonna, antipyrin, quinin, etc.), are in most instances of the nature of an erythema, and many cases are recorded in which they were confused with the disease whose skin lesion they so closely resemble. Scarlatinoid eruptions have been reported as having followed such trifling disturbances as that caused by the passage of a sound, or the administration of an enema. Frequently red rashes, usually, however, localized in area, appear as the result of reflex disturbance in uterine or ovarian disease, or at the menstrual period. Of course, the explanation of this is to be found in the fact that they are all practically embraced within the first two classes mentioned by Albert Hoffa (*op. cit.*); that is, they are either the result of direct vaso-motor irritation, or, as in the case of the drug rashes, are secondary to the absorption of some substance which acts on the vaso-motor nervous system in such a way as to disturb its equilibrium. It would seem that the most common source of error in the diagnosis of cases of this character has been that the rash has alone been considered to be the diagnostic feature, and the other symptoms of scarlet fever have either not been sought for, or, if not present, the case has been ranked as scarlatina of an atypical type.

Dr. A. O. Blackadder[1] emphasizes the fact, so often overlooked, that "the mere presence of a scarlatinal rash, going on to desquamation and associated with pyrexia, does not of itself warrant the diagnosis of scarlet fever." Considering the variety of conditions which give rise to scarlatinal rashes, it would seem unwise to regard as the most important and characteristic feature of a disease that symptom which, above all others, is most frequently simulated. Systematic writers notice the occurrence of *scarlatina sine angina* and of *scarlatina sine eruptione*, thereby demonstrating the liability of the disease to variation as regards its most prominent symptoms.

Paget[2] regarded all these scarlatiniform eruptions associated with pyrexia and following surgical procedures, as true scarlatina. He held the view that the occurrence of scarlatina after operation was not a coincidence, as, if it were, we would find a corresponding number of cases among surgical patients who had not been operated upon. He never in his private practice saw scarlatina supervene in a surgical case which had not been the subject of recent operation, whereas, the year previous to the publication of his lectures he saw six cases following operations in his private practice, had notes of four others, and had heard of many more. He states as his opinion that there was something in the consequences of a surgical operation which made the patient peculiarly susceptible to the scarlatinal infection, and he held that with this susceptibility of the patient the disease underwent certain modifications, which accounted for the obscuration of the diagnosis in so many of the cases.

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[1] *Archives of Pediatrics*, vol. xii, No. 9, 1895.

[2] Clinical Lectures on Surgery.

E. C. Stirling,[1] after a most exhaustive investigation of the subject, affirms that "there occurs sometimes after wounds and injuries what may be called a simple surgical erythema, often closely resembling scarlet fever but independent of any connection with that disease. Other eruptions of different type may occur under like circumstances." He says scarlatina occurs also in such conditions, but whether it should be regarded as more than a mere coincidence he thinks is still *sub judice*. He recommends that all such cases should be isolated, as an absolute differential diagnosis is in the majority of cases almost impossible. Goodhart (*op. cit.*) states that "there is no room for doubt that scarlet rashes after operation at the Evelina Hospital have mostly been veritable scarlet fever." He says distinctly that he does not regard all red rashes following wound or operation as scarlatinal, but that experience shows that they are mostly such, and hence should be isolated. The twenty-five cases, however, which he commented upon, all presented a definite history of infection, and when removed to the fever ward where patients with scarlet fever were confined none of them contracted it. All of them presented other characteristic features in addition to the rash. Dr. Goodhart holds that any local nidus of inflammation suffices to increase the susceptibility of a patient to scarlatina, and that it is not necessary for a traumatism or an operation to have occurred recently to increase this susceptibility. Hoffa (*op. cit.*) thinks that there is no doubt that surgically wounded patients manifest a predisposition to contract scarlet fever. His view is that the disease enters the system through the wound, and in support of this he cites cases in which the eruption began at the edges of the wound and gradually spread from there over the body. He differs from Paget, who thought that the poison lies dormant in the system of the patient at the time of the reception of the wound, and that the patient might never manifest the disease if his vitality had not been impaired by the latter. Against Hoffa's view might be stated the fact that undoubted scarlet fever has been reported as occurring in cases where the repair of the wound has run a healthy course throughout.

J. Hendrie Lloyd[2] reported a case which was undoubtedly one of true scarlet fever, as it gave rise to an epidemic. The wound was a trephining one of the skull, and the eruption made its appearance on the abdomen and thighs. In Henoch's case,[3] which also was one of true scarlet fever, the operation was the opening of an abscess in the pectoral region, and the eruption began on the face, arms, and inner surfaces of the thighs.

In contradiction of Paget's theory of the occurrence of the disease being a result of impaired vitality we may cite the numerous cases which have occurred after very slight disturbance of the organism. Thus the opening of an abscess rarely depresses the vitality of the patient. J. Walter Browne[1] reports the occurrence of true scarlet fever, proved by its communication to other patients, in a man whom he had circumcised, an operation certainly not calculated to greatly impair the vitality.

An analysis of the reported cases has been rendered difficult by the various manners in which they have been reported, and because so many of the cases said to have been of true scarlet fever were simply judged to have been such by the appearance of the rash, and have been reported without reference to the absence or presence of other diagnostic symptoms of the disease.

As regards the nature of the injuries or operations which are followed by scarlatiniform eruptions or scarlet fever.—From the following table it may be seen at a glance that the nature of the injury or operation has but little if anything to do with the development of the eruption. All of the abscesses in the list were probably tuberculous, save two, as they communicated with diseased bone. Of the two exceptions, one was an ischiorectal abscess, the other an abscess over the pectoralis major muscle. Lithotomy stands high on the list, and attention may again be called to the fact that Civiale mentions the development of eruptions after this operation. The cases here included are all such as were regarded as true scarlet fever or as "surgical scarlet fever" by those who reported them :

Opening of abscesses, 16; lithotomy, 13; circumcision, 8; burns, 7; staphylorrhaphy, 5; tracheotomy, 4; tenotomy, 4; osteotomy, 4; sequestrotomy, 4; harelip operation, 3; bruise, 3; removal of diseased tarsus, 2; amputation of thigh, 2; plastic operation for webbed fingers, 2; opening of sinuses, 2; lacerated wound, 2; removal of lipoma, 2; scalds, 2. Of each of the following there was one case reported: Supernumerary toe (plastic), aspiration of abscess, herniotomy, ovariotomy, excision of elbow, amputation of arm, resection of knee, ligation of varicose veins, Syme's operation (disease of tarsus), tonsillotomy, removal of exostosis from tibia, removal of cysts from neck, resection of hip, operation for encysted hydrocele, fracture of femur, puncture of cyst, abrasion of arm, excision of hemorrhoids, operation on septum nasi, incision of empyema with drainage. Total, 105.

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[1] "St. George's Hospital Reports," vol. x, 1879.

[2] "Annals of Gynecology and Pediatry," April, 1891.

[3] *Charité Annalen*, iii, Jahrgang, 1876.

[1] *British Medical Journal*, vol. ii, p. 692, 1895.

As regards the age of the patients.—The age of the patient was stated exactly only in seventy-two of the above cases. The oldest patient was a woman of twenty-six years, the youngest a child of twenty-one months. But five of the seventy-two were twenty years old or upwards. The average age was six years and four months. Some have regarded the youth of the patients as significant of these eruptions being truly scarlatinal, because of the much greater frequency of occurrence of scarlet fever during childhood. It must be remembered, however, that a child's nervous system has not attained the equilibrium possessed by that of the adult, and that vaso-motor phenomena are consequently more easily induced and are of more striking character than they are in the adult. It is probable that the majority of these cases come under the first class of Hoffa, and must be regarded as vaso-motor phenomena.

Sex.—It is a curious fact that although we might have expected, from the greater susceptibility of their nervous systems, to find the number of females exhibiting these phenomena greater than the number of males, the contrary is true, for of 104 cases in which there is a record of the sex, 61 were males and 43 females. Of course, there is no difference in the susceptibility of the two sexes to scarlet fever.

The history of infection, or of non-exposure, presented by such cases.—In some of the cases recorded, which afterwards proved themselves to be undoubted scarlet fever, it was impossible to find any source of infection. In Lloyd's case (*op. cit.*) he was unable to trace any history of exposure whatever, the ward in which it occurred being new, somewhat isolated, and having never contained a case of scarlet fever before. The patient had not been exposed to infection from without. There is also the celebrated case of Surgeon-Major Ffolliott of Peshawur,[1] in which a private in the British army in garrison in India was injured by a powder explosion, and four days later developed a bright scarlatiniform eruption with rapid pulse and high temperature. The medical officers pronounced the case one of scarlet fever. Anent this case, Sir Joseph Fayrer made the statement that scarlet fever was so rare in India that many hold it is not seen at all. He had seen but two cases and these were distinctly traceable to a box of infected clothing sent out from Europe.[2]

J. Walter Browne (*op. cit.*) reports an interesting series of cases in this connection. A man admitted to his ward, and circumcised the day of admission, thirty hours after operation developed a typical attack of scarlet fever and died in seventy hours. It transpired that during the two weeks previous he had been daily visiting a friend who was suffering from scarlet fever. A girl, whom his assistant dressed after having earlier in the day attended upon the circumcision case, developed scarlet fever in sixteen hours. A child that was admitted to the ward with a lacerated wound of the leg, and placed for three-quarters of an hour in a bed next to that occupied by the girl mentioned, six hours after admission, developed headache and vomiting and died in fifteen hours without the appearance of the rash. *Post-mortem* an abundant purpuric rash appeared. Here the disease seems to have manifested an extreme degree of contagiousness and malignancy. He also reports an isolated case of a healthy child with a harelip, who, sixteen hours after operation developed a rash and died. It had been exposed three months previously to operation.

Immunity.—The question arises whether these scarlatiniform eruptions manifest themselves as readily in those who have previously had scarlet fever as they do in those who have never had the disease; also, whether the occurrence of the traumatic rash renders the patient any less liable to subsequent infection. Scarlet fever is a disease which is particularly inapt to occur twice in the same individual, hence the question of immunity would seem to have an important bearing on the nature of these eruptions. The records concerning this point are, unfortunately, very scanty. H. W. Page[1] reports a case of undoubted scarlet fever occurring in a man who had had two previous attacks. It was a genuine case of the disease, as he communicated it to one of his nurses. He had had some old sinuses in his groin slit up five days previous to the appearance of the eruption. Mr. George May[2] reports what appears to have been genuine scarlet fever following a lacerated wound of the scalp in a boy who had previously had the disease. The only anomalous symptom of the boy's second attack was the absence of sore throat; otherwise the case was typical. Of course, with such scanty data, no definite conclusion can be drawn. Mr. Murray,[3] however, in reporting an outbreak of scarlet fever in the Pendlebury Children's Hospital, states that at the time of the outbreak there were twenty-seven children in the ward, twenty-three of whom had wounds, while four had not. Five of the patients with a wound had previously had scarlet fever; none of the cases without wounds had ever had it. Only one of the patients without a wound contracted the disease.

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[1] *British Medical Journal*, vol. i, p. 505, 1879.

[2] Hoffa places Ffolliott's case in his third division as one of toxic erythema.

[1] *Lancet*, vol. ii, p. 887, 1885.

[2] *British Medical Journal*, vol. ii, p. 428.

[3] *British Medical Journal*, June 18, 1887.

Does an operation or a traumatism increase susceptibility to scarlet fever?—Paget (*op. cit.*) thought that it does, and produced records from his case-book to prove it. Goodhart, as we have seen, thought that any inflammatory focus in an individual rendered him more apt to contract scarlet fever. Mr. Murray's series of cases, referred to above, would seem to bear out the view that susceptibility is increased by a wound or an operation. Paget, in reporting the case which we have cited, raised the question as to whether it is justifiable to operate on a patient who has been even remotely exposed to the contagion of scarlet fever. The man upon whom he operated had two nurses in constant attendance, and they were equally exposed to contagion. One of them contracted the disease. The other nurse had never had scarlet fever, and two weeks later Paget removed one of her breasts for an adenosarcoma, yet she never manifested any symptom of the disease. He questions whether it was right for him to operate when he knew she had been thus exposed. J. A. Lea[1] reports a case of abscess of the leg from necrosis of the tibia. The patient was a man aged thirty-nine years. A few days after the operation his temperature rose to 104° F., and a scarlet eruption appeared, which went on to desquamation. He had albuminuria, but no sore throat. It was shown that one of his children had just had scarlet fever, and subsequently several more of the children developed it, but the surgical patient was the only adult among a number who were equally exposed who manifested any symptom of the disease.

The relation which the treatment and behavior of the wound bears to the development of such eruptions.—The earlier writers on this subject wrote at a time when the antiseptic treatment of wounds was just coming into vogue, and had not of course reached its subsequent perfection of technic. Goodhart laid stress upon the fact that the principles of antisepsis, as at that time laid down, had been strictly carried out in all the cases reported from the Evelina Hospital. Stirling emphasized the statement that if the theory of the absorption of the scarlatinal poison through the wound is correct, we should find a most notable diminution in the number of cases when the antiseptic treatment would be more universally adopted. This diminution has not occurred. Fully as many cases are seen at the present time, when the aseptic treatment of wounds is so thoroughly understood and practised, as at the time when he wrote (1879). It might be suggested that some of the rashes occur as the result of the use of the drugs employed in procuring this asepsis; but even if we exclude some cases on these grounds, we have epidemics, such as Lloyd reports, where the wound was rendered as sterile as possible, and where the disease proved itself true scarlet fever, so that there was no question of any drug-poisoning. Of course, the occurrence of pyemic or septicemic rashes, the result of invasion of the organism by septic material in the wound, is not to be considered as affecting this statement, as we refer only to the occurrence of genuine scarlet fever, or of the scarlatiniform erythemata.

As regards the behavior of the wound, we can only say that it appears, in the vast majority of cases, to bear no relation to the rash, or to infection with true scarlet fever. In Lloyd's case the wound pursued a healthy course. Occasionally, as in J. A. Lea's case, the wound assumes a phlegmonous and unhealthy appearance. As the occurrence of any pyretic condition would in most cases somewhat disturb the process of healing, we must distinguish the unhealthy appearance of the wound resulting from an intercurrent febrile attack from a bad condition of the wound causing such an outbreak.

Variations in the course of true scarlet fever occurring under such circumstances.—We would naturally expect to find the disease undergoing some modifications in its course if it occurred in a patient suffering already from a wound, but the question we desire to answer is, Is there any constant variation in scarlet fever in these conditions which will always be present when the disease follows traumatism? To this we must answer in the negative. "Surgical scarlet fever" possesses no distinctive feature; it varies with the greatest irregularity, or sometimes varies not at all. Some have held that the period of incubation of the surgical form is shortened, but it has been proved that it varies from twenty-four hours to six days, and averages about the same as that of ordinary scarlet fever.

The rash presents, as might be supposed from it always being mentioned as the characteristic of "surgical scarlet fever," the same features as the ordinary scarlatinal rash, varying, as it does, occasionally, but as a rule appearing as an erythematous, punctate flushing, which disappears in three days by scaly desquamation.

One curious fact is that even when the disease has definitely proved itself to be scarlet fever, there has been a marked tendency to an absence of sore throat, or when it has occurred it has been mild, as in Lloyd's case.

Medical Men Volunteering to Fight the Plague.—A call has been issued to army medical officers in England for volunteers to go to Bombay and assist in suppressing the plague. It is meeting with prompt response.

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[1] *British Medical Journal*, February 15, 1879.

MYCOSIS OF THE TONSILS AND ADJACENT PARTS.

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SINCE the first contribution to literature on the subject of mycosis of the tonsils and contiguous structures by Fränklel, in 1873, others have written more or less concerning this disease, yet information at this date in medical books or journals is meager, and little or nothing new has been elicited in the way of diagnosis or treatment. Various investigators have reported this affection as occurring in persons of all ages, ranging from twelve years to over sixty, although it is usually a disease of young adult life. Lennox Browne says that it "generally occurs in subjects living in damp, unsanitary dwellings and neighborhoods, and who exhibit want of cleanliness." This may in a measure be true, but I think the experience of others goes to prove that the disease is just as liable to be found among persons living among the best of sanitary surroundings and of most cleanly habits. I think it is generally seen in persons suffering from a general cachexia and from catarrhal affections, but the etiology of pharyngo-mycosis is extremely uncertain. No researches have as yet succeeded in tracing the origin of this disease, but there is a consensus of opinion that the leptothrix bacillus is the leading microbe found in the growth. Hypertrophied tonsils, atrophic rhinitis, mouth-breathing, etc., seem to predispose to the production of the disease.

According to writers on the other side of the Atlantic, mycosis is a rare affection, and in this country comparatively few cases are brought to the notice of the profession. In mycosis of the throat an accurate diagnosis is always desirable for its successful treatment, as there is a possibility of its being confounded with follicular tonsillitis or pharyngitis; and as the methods of treatment are so different it is very essential that the proper line of procedure be adopted at the beginning. Some affections may be successfully treated symptomatically, but mycosis cannot. One writer mentions dental caries as a possible cause of the disease. Microscopic examination will clear up any doubt as to diagnosis.

Local symptoms vary; sometimes nothing is felt; again, there may be a scratchy sensation, or a slight or severe tickling, producing cough, dyspnea, dysphagia, etc. In other cases inflammation, with pain and fever, is present, with the consequent constitutional disturbances. Asthma is sometimes present, and is quite persistent. The objective symptoms are spots upon the pharyngeal wall, the lingual, faucial, or pharyngeal tonsils, or on the anterior or posterior pillars, but apparently the favorite seat is upon the faucial tonsils.

I think Dr. Henry B. Hemenway describes this affection better than any authority I have seen, so I shall quote his words as follows: "These spots vary in color from white to cream yellow, but the former is the prevailing color. When upon the tonsils they are seen to grow from the crypts, are very tenacious, not easily torn off, and when removed by forceps are rapidly reproduced in the same locality, sometimes within twenty-four hours. Generally, the growth is in the form of filaments or tufts; sometimes confluent in a form of membrane. Normally, the mucous membrane around the fungus is natural in color. Mycosis is differentiated from diphtheria by its chronic nature; by less tendency for the fungus to spread; by absence of fever and symptoms of systemic disturbance—excepting when accompanied by tonsillitis; by absence of the diphtheritic odor; by absence of pain, and by the form of the fungus. When in the membranous form it does not come off as a membrane, but breaks in pieces. When removed it sometimes leaves bleeding spots, but the mucous membrane is not so much denuded as in diphtheria. In follicular pharyngitis the contents of the follicles are easily expressed. The calcareous concretions sometimes found in chronic follicular amygdalitis often project from the crypts and are also easily expressed. Although in follicular inflammations the accumulations frequently contain leptothrix threads, they are not composed of the filaments. The only sure way or method of diagnosis is by the use of the microscope."

This affection is not dangerous in any degree, but is very troublesome, owing to the peculiar liability of persons so affected to frequent acute inflammations of the tonsils and adjacent parts, and extension into the larynx. Dr. Hemenway states that "it may be implanted upon the nasal mucous membrane or in the lungs." The former is correct, but I believe the latter to be impossible. Certainly, no instance of this particular fungus being found in the lungs has been recorded, as far as I have been able to discover. At one time I made a note of a case discovered in the larynx, but have forgotten when or by whom noticed.

Many methods of treatment have been suggested, such as the local application of chemically pure lactic acid, bichlorid of mercury solutions, or alkaline solutions, (on the theory that the leptothrix germs thrive only in acid secretions), and of tincture of iodin, nitrate of silver, alum, tannin, permanganate of potassium, etc., but these agents in my hands have only given temporary relief, and like all other medicinal lotions have proved worthless as regards a permanent cure. Dr. John Dunn of Richmond, Va., claims good results from the use of permanganate of potassium. With all specialists the galvano-cautery alone, or the curette or forceps, followed by the cautery until the base of the trouble is reached, has proved the only means of complete eradication.

The following is a case in point:

Miss J., aged nineteen, accompanied by her family physician, called on me in October, 1891. The latter wished to ascertain why it was that he could not cure a case of follicular tonsillitis, which had been so much more obstinate than any before met with in his experience. The lady belonged to a wealthy family, and was herself large, very robust, and energetic. The sanitary conditions of her home were of the best, and all surroundings favorable to health and good nature. She was subject to frequent attacks of acute tonsillitis, and latterly to a slight cough and a very annoying scratchy sensation of the throat, which would not respond to treatment. Ocular inspection revealed considerable hypertrophy of both tonsils with numerous deep crypts filled with a whitish substance which I believed to be leptothrix. This supposition was confirmed subsequently by microscopic examination. I pronounced it a case of mycosis, and, the tonsils being so large, I believed that by excision I could get below the base of the trouble and thus effectually eradicate the disease. Tonsillectomy was therefore performed, but it resulted in failure, as the disease extended much deeper. I then concluded to use the electro-cautery. This was applied at intervals of from one to two weeks, fourteen times in all, before thorough eradication was accomplished. Up to the present date there has been no return of the disease.

During the last four years I have seen eleven cases of tonsillar or pharyngo-tonsillar mycosis in persons ranging from a robust condition to that of general asthenia. Some have been in families with good, and some in families with very bad, sanitary surroundings, and sanitation appeared to have very little to do with it. A majority of the patients were subject to recurrent acute tonsillitis or pharyngitis, and some had great hypertrophy of the tonsils, in which cases excision effected a cure. One patient, particularly, thirty-six years of age, who had suffered for years from tonsillitis and asthma, applied to me for relief. The nose was in excellent condition, but the tonsils were of enormous size and were mycotic. They were removed, and the asthma and tonsillitis vanished, never to return. Of course, I do not believe that the mycosis had anything to do with the asthma, as this must have been produced chiefly by the great obstruction in the pharynx which impeded free respiration.

The Superior Longevity of Women.—Of the fourteen reputed centenarians who died in England during 1896, eleven were women. Of the 188 persons who were declared at death to be over ninety years of age, 108 were women.

CLINICAL MEMORANDA.

HERNIA OF A SARCOMATOUS OVARY.[1]

By GEO. SEYMOUR, M.D.,
OF UTICA, N. Y.

Sarcoma of the ovaries within the pelvis at their normal location is comparatively rare. Cystosarcoma, fibrosarcoma, and round-celled sarcoma are more often mentioned than spindle-celled sarcoma; so that a spindle-celled sarcoma escaping when of small size through the internal ring, and developing outside the pelvic cavity proper, and retaining direct relation to the uterus by means of peduncular attachment may be regarded as exceedingly uncommon.

On the 15th day of November last I was requested to visit Mrs. D. to advise in reference to a swelling or tumor in the right inguinal region. She was forty-eight years old, mother of several children, the oldest twenty-five years, the youngest five years of age. She gave no history of miscarriage or menstrual derangement of any kind, and said that a small tumor had first appeared about two years before, had gradually increased in size without causing pain or discomfort, had disappeared when she was in the recumbent position during the first year of its existence, but had remained prominent both day and night during the past year. On examination I discovered the tumor to be somewhat sensitive to touch or pressure, with slight heat and redness of the surface, hard and irreducible. For two weeks previously it had caused some pain when she was in the standing or sitting posture. There was no vomiting nor obstruction to movements of the bowel. The appearance and location of the tumor led me to think it to be an inguinal hernia, possibly of incarcerated omentum, without strangulation. Dr. A. R. Simmons, who saw the case with me a short time after my first visit, concurred with me in the opinion that an operation for reduction of the tumor and relief of the patient was advisable. She accordingly went to St. Luke's Hospital, and on November 23d we performed an operation, the commencement of which was with the idea of dealing with an ordinary inguinal hernia not accompanied by intestinal obstruction.

After incision of the integument and tissues across the face of the tumor down to its sac, which was composed of layers of fascia and peritoneum, the mass was found to be attached to a large pedicle or ligament about four inches long and three-quarters of an inch in diameter, extending from the uterus within the pelvic cavity out through the internal ring to the under side and upper end of the tumor as it lay in the inguinal canal. The pedicle was tied with a strong silk ligature, cut off at about the junction of its outer and middle thirds, and the end of the portion left within sutured with catgut into and at the opening of the internal abdominal ring. A portion of the sac was ligated with catgut and excised. The tumor was ovoid in shape, four inches long, eight inches in circumference, and weighed five and three-quarter ounces. The wound was closed with silkworm-gut sutures, except at its lower part, and iodoform gauze left in the whole tract for drainage. At the end of six weeks from the time of the operation the large ligatures about the pedicle had passed out at the sinus and the wound was completely closed. Microscopic examination of the tumor by Dr. Stump, the pathologist of the hospital, proved it to be a spindle-celled sarcoma of the ovary.

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[1] Abstract of paper read before the New York State Medical Society, Albany, January 28, 1897.

The woman is now in good health, and has neither direct nor indirect local or general disturbance of the pelvic organs. Menstruation has occurred twice since the operation in a perfectly normal manner.

THE SERUM-THERAPY OF DIPHTHERIA IN PRIVATE PRACTICE.

By A. C. HERMAN, M.D.,
OF LANSDALE, PA.

DURING the past spring and summer no less than thirty cases of diphtheria appeared in the town of Lansdale. Some of these were treated with antitoxin, while others received the older treatment. The results were so favorable to antitoxin that I am prompted to report them. I am now convinced that in all cases of diphtheria speedy and immediate cure will follow the early and proper use of this agent, and that no sequelæ or untoward complications need be feared. This declaration is made independently of any statement relative to the day on which the initial dose is or should be given. I wholly agree with the foremost authorities that the *early* employment of the serum is always most desirable. What I wish to state is, that the severity and prognosis of a case is not dependent, *per se*, upon the number of hours which may have elapsed since the appearance of the first symptoms, but upon the quantity and virulence of the toxins absorbed into the system, and the cell destruction of the vital organs caused by them. The wide difference between individual cases of the same epidemic of diphtheria, and between cases of different outbreaks is thus explained.

The best rule for treatment is to give the initial dose of antitoxin immediately after the diagnosis of diphtheria is made. In all doubtful cases it is best to administer it even if a positive diagnosis cannot at the time be reached. Professor H. C. Wood states: "There is no reason at present for believing that antitoxin in moderate quantities does any harm when the child has not diphtheria. When, therefore, any case presents the clinical aspect of diphtheria, antitoxin should be used at once." Dr. L. Emmett Holt, Chairman of the Committee of the American Pediatric Society appointed to investigate the results of the serum treatment of diphtheria in private practice, speaks of the action of antitoxin in the system as being two-fold: (1) It prevents further development of the specific bacilli; (2) it neutralizes the toxins already present in the system. If the deadly effect of the toxins upon the centers of vitality has already passed the line beyond which redemption is impossible, it is clear that at best antitoxin can simply somewhat lengthen life.

One point I wish to make prominent here is that carbolic acid, which is but feebly antiseptic except in strong solutions, is a powerful toxic agent in the human system. It is too irritant a drug to use in the preservation of antitoxin. I believe the failure to recognize this fact has resulted in deaths which were falsely charged, in part or wholly, against the antitoxin treatment. Trikresol, which is but feebly toxic, does not irritate the kidneys, while it is such a valuable antiseptic that but five-tenths of one per cent. is required to positively prevent contamination of the serum. All zymotic diseases necessarily have a most dire effect upon the vital organs; these need sustaining treatment, and it is as important to husband the patient's strength as it is to combat the disease. The following are a few reports in detail of my personal experience with antitoxin:

CASE I.—L. G., aged six years. The membrane covered all of the pharyngeal surface and extended into the larynx and trachea. It so impeded respiration that suffocation was imminent. The patient's sonorous breathing was audible from every part of the house. There was a most harassing cough. Prior to my visit she had had no treatment. The house next above and the second one below were under quarantine, and in each of these homes one child died. No antitoxin had been employed.

Sixteen years of practice, during which I had seen many cases of diphtheria, showed me that the case was a hopeless one. I was forced to the conclusion that no line of treatment hitherto advanced in this dread disease could save the patient, unless it was that of antitoxin, which, however, I had never used. A messenger was hastily sent for 2000 units (20 cc.) of antitoxic serum. During the afternoon of the same day 1000 units of the antitoxin was injected in the region of the groin, and on the following day I repeated the dose. The result was prompt and decided. As supplementary treatment, quinin, calomel, tincture of iron, and a liberal supply of whisky, was used. The convalescence was uneventful, the patient being discharged one week after my first visit.

CASE II.—Wm. G., aged fourteen, a member of the same family, was taken ill on the day his sister received her initial dose of antitoxin. His entire pharyngeal surface was early enshrouded with the diphtheritic membrane. He was promptly given an injection of 1000 units, which for the sake of prudence was repeated on the second day, although the throat was almost clear of membrane at that time. The patient rapidly recovered. In this case the additional treatment was confined to an astringent gargle, tincture of iron and quinin.

CASE III.—A. B., aged six years. This case appeared a few weeks after the foregoing. The appearance of the throat excited suspicion, but could not lead to a clear diagnosis of diphtheria. After employing the usual remedies with only moderate success for about six days, the entire pharyngeal surface was rapidly invaded by the characteristic membrane. The patient was promptly given an injection of 1000 units and all other treatment was discontinued, except small doses of tincture of iron. In this case I used a concentrated form of antitoxin, 4 cc., representing 1000 antitoxic units. The dose was repeated once. The result was the same as in the other cases.

CASE IV.—R. T., aged five years. This case was one of several in the same family, all of which, except this one, were very mild attacks and were not treated with antitoxin. The disease in this patient early assumed a most malignant aspect, the throat being literally full of the exudate. One thousand units of concentrated antitoxin was injected, and the dose repeated on the following day. The effect was again equally favorable.

At the same time, a brother physician had a patient, an only child, in a neighboring family, who was suffering from a most virulent attack of the disease. Encouraged by the foregoing results the physician borrowed my syringe, and with two doses of 1000 units each, successfully treated his case.

The dread that I always entertained of having this monster, diphtheria, invade my own home and community, has absolutely left me, as I am now firmly convinced that in antitoxin we have a remedy that is worthy of our entire confidence.

MEDICAL PROGRESS.

The Pathology of Multiple Sclerosis.—GOLDSCHEIDER (*Zeitschrift für Klinische Medicin*, B. xxx, H. 5, 6, p. 417,) has reported a case of multiple sclerosis terminaing fatally as a result of intestinal hemorrhage in the course of an attack of typhoid fever, and showing apparently the important part played by the blood vessels in the pathology of the spinal disorder. A girl, twenty-two years old, without neuropathic heredity, began to complain of a sense of heaviness in the legs, with difficulty in ascending stairs. Vertigo was present during the day, and on one occasion the patient fell, arising, however, immediately. On two occasions there had been vomiting. Drowsiness also manifested itself. On awaking one morning vision was obscured by tremor of the eyelids and hearing was dull. The impairment of vision and of hearing was greater upon the right side. On attempting to rise the patient fell. During the night there had been severe headache, much worse on the right side. The patient was well developed and well nourished. The face was flushed, the hands somewhat livid, the feet cool. No visceral disorder could be discovered. Marked nystagmus was present and was principally vertical. The palpebral fissure was narrow on either side. The left pupil was somewhat larger than the right; both reacted to light and in convergence. No ophthalmoscopic abnormality was detected. The patient complained of the movement up and down of bodies before her eyes. On lateral movement of the eyes the objects moved forward and backward. There was complaint of roaring in the right ear. Both auditory canals contained plugs of cerumen, the removal of which was, however, not followed by improvement of hearing. The upper extremities were ataxic, the right in particular, and this was also weakened. The right lower extremity also was ataxic and weak. The tendon-reflexes and the bone-reflexes in the upper extremities were preserved; the triceps-jerk was the more marked upon the right; the knee-jerk was exaggerated upon both sides, but there was no ankle-clonus. Sensibility was undisturbed. The cutaneous reflexes generally were enfeebled. The vesical and rectal functions were maintained. In the progress of the case the paresis of the right upper extremity increased. The uvular, palatal and pharyngeal reflexes were wanting. The tongue was protruded properly. The chin-jerk was preserved. Both deglutition and articulation were effected normally. The corneal and conjunctival reflexes were active. The sense of smell and also of taste was scarcely as acute upon the right side as upon the left. There was a conspicuous tendency to somnolence. In the course of the disease a sense of numbness in the right arm was complained of, and on examination it was found that painful and tactile sensibility was diminished in the right hand, the whole of the right arm, the right half of the back and chest, the right side of the face and the right half of the tongue. In slighter degree the sensibility of the right foot also was impaired; on the other hand, the disturbance was more marked in the right leg and thigh. The grasp of the hand was greatly enfeebled, and there was considerable difficulty in moving the right arm. The knee-jerks were still active on both sides. The cutaneous reflexes had become feebler on the right than on the left. Later, numbness and weakness, with ataxia and impairment of sensibility, appeared in the left lower extremity, and the head became tremulous. Symptoms of typhoid fever made their appearance, and death ensued in the sequence of hemorrhage from the bowel. *Post-mortem* examination disclosed, in addition to the lesions of typhoid fever, parenchymatous myocarditis, fibrinous pneumonia of the right lower lobe, pulmonary edema, nephritis, hepatitis, parenchymatous gastritis, and chronic diffuse interstitial encephalitis. On section, both brain and cord appeared remarkably firm. On transverse section through the upper portion of the pons, the vessels were seen to possess an unusually large lumen, and the surrounding tissues presented a grayish-red color. In the middle of the medulla-oblongata a similar grayish area was found. No gross microscopic change could be detected in the spinal cord, and bacteriologic examination yielded negative results. A number of the peripheral nerves examined were found to be normal. After preservation of the cord for several days in Müller's fluid an extensive area of degeneration in the cervical region became visible, extending forward to the posterior commissure, on the right to the median limit of the right posterior horn and backward close to the periphery. The area corresponded to the second and third cervical segments, and had a vertical extent of rather more than half an inch. After preservation for four months in Müller's fluid scrutiny of sections showed in the affected areas a morbid process arising from the vessels and leading to swelling of the nerve-fibers. Many of the medullary sheaths were thickened, and the axis-cylinders shared in the swelling. Some of the medullary sheaths, on the other hand, were reduced in size, and some of the axis-cylinders deprived of their myelin. These had evidently passed through the stage of swelling. In the dorsal region of the cord there existed a diffuse sclerosis of considerable degree, with degeneration and atrophy of numerous ganglion-cells in the anterior horns. The sclerosis involved also the anterior columns and the anterior portion of the lateral columns. A similar process was present in the lower part of the cervical region. The blood vessels passing in the septa from the periphery of the cord into the posterior columns were filled with blood and surrounded by granule cells and fatty detritus. In the diseased areas were present numerous small vessels surrounded by one or more layers of round cells. The changes corresponded in general with those found in acute myelitis, as well as passive swelling in consequence of edema. The presence of old diffuse sclerosis is accepted as evidence that the acute lesions represented the beginning of the sclerotic process. The sequence of events is believed to have been a perivascular inflammation, resulting in injury to the adjacent nervous structures, and inducing, especially, a disintegnation of the medullary sheaths, the axis-cylinders in general persisting. Secondarily there resulted a reactive interstitial hyperplasia.

Pulsating Vessels in the Pharynx.—This unusual anomaly was observed by McBride (*Edin. Med. Jour.*, December, 1896,) in three cases. In the first of these a large arterial trunk could be felt in the right posterior pillar of the fauces. There was a systolic but no diastolic aortic murmur. The second case was that of a man who presented a fluctuating and pulsating tumor in the region of one tonsil. It was thought that it might possibly be aneurismal, but upon operation it was found to be a cyst. In the third case the pulsation was evidently due to an anatomical abnormality. In this case there was also a systolic aortic murmur, and the carotid, subclavian, axillary, and brachial arteries showed marked pulsation.

The occurrence of pulsation in the pharynx is of considerable clinical importance. No one would be likely to plunge a sharp instrument into a pulsating tumor in this region without most careful examination and consideration, but the existence of arterial abnormalities such as those spoken of should be recognized by all practitioners who may be called upon to treat an acute throat affection.

Pulmonary Insufflation.—Operations upon the thoracic organs could be easily performed if it were possible to open the pleural cavity without disturbing the physiologic construction of the lung. Tuffier and Hallon (*Gaz. Hebdom. de Méd. et de Chir.*, November 26, 1896,) have accomplished this object by insufflation in numerous operations upon dogs. After a dog is chloroformed, a long copper tube is passed through the mouth into the larynx and connected with a bellows. Artificial respiration being thus established it is possible to open the pleural cavity, explore it by means of an electric light, and perform various operations upon the esophagus, the sympathetic and pneumogastric nerves, etc. This artificial respiration has no injurious effect upon the pulmonary circulation, and the dogs thus operated upon recovered perfectly.

THERAPEUTIC NOTES.

An Epidemic of Soor and its Treatment.—Grosz describes an epidemic of soor which occurred in the Maternity Hospital at Budapesth. Within two years 233 of the 715 infants born were affected with soor. The most carefully carried out prophylactic and hygienic measures, such as cleansing of the rooms and their disinfection by means of sulphur and thorough airing; the care of the children by special nurses, and frequent washing of the nipples, had only a temporary effect on the outbreaks of the disease. It was only after the daily brushing of the mouths of all new-born children with a one per cent. solution of nitrate of silver that the epidemic was brought under control. The few cases which then developed were of a milder character, and recovered after they had been swabbed daily with a 2–3 per cent. solution of nitrate of silver. No unpleasant effects of the treatment were observed. (*Jahrb. f. Kinderheilk*, Bd. 42, 2.)

The Care of Premature Infants.—Schmidt describes his treatment of an infant born seventy days before full term, weighing at birth 1,490 grammes and at the end of the first year 7,000 grammes. At that time it was in perfect health and had already six teeth. The success of his treatment rested upon the two points of careful maintenance of warmth and feeding with the milk of its mother. The heat of the child was preserved not only by warm flannel clothing, hot bottles and a position of the basket near a warm stove, but by the avoidance of all unnecessary cooling, *e. g.*, in washing, in the changes of the temperature of the room, etc. Until the child was old enough to nurse, the milk was drawn from the breast by an ordinary glass pump. (*Jahrb. f. Kinderheilk*, Bd. 43, 3 u. 4.)

The Treatment of Warty Growths of the Genitals.—W. S. Gottheil, in a paper on Epithelioma of the Penis, read before the Society for Medical Progress, November 14, 1896, concludes as follows:

1. Warty growths of the genitals, more especially in the male, are always to be suspected of malignancy, no matter how innocent they seem.
2. They should either be left entirely alone or be thoroughly removed by knife or cautery.
3. Imperfect attempts at destruction by nitrate of silver, carbolic acid, etc., are especially to be avoided, as in many recorded cases they have apparently stimulated a benign growth into malignant action.—*International Journal of Surgery*, January, 1897.

In the Treatment of Lobar and Lobular Pneumonia Véret (*Archives de Médicine et de Pharmacie Militaires*, September, 1896, p. 158) recommends the inhalation for ten minutes six times in the twenty-four hours of the following formula in spray:

Creosote	½ ounce
Phenic acid } aa . . . Alcohol }	80 minims
Glycerin	1½ ounces
Alcohol, 95 per cent. . .	6½ ounces

When the solution is to be employed it should be diluted with an equal quantity of distilled or filtered water. It is important that all of the constituents should be of the utmost purity.

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SATURDAY, FEBRUARY 20, 1897.

THE SCOPE AND PURPOSES OF THE RECENT ACTION OF THE NEW YORK BOARD OF HEALTH.

To anyone who reads carefully and thoughtfully the recent announcement of the New York City Board of Health, printed in the MEDICAL NEWS of January 23d, in which the necessity for municipal supervision of tuberculosis is set forth, it would seem that no further argument was necessary in order to gain cordial approval of its action. If the history of the movement of the Board looking to the more intimate supervision of this disease is reviewed, the fact becomes apparent that in making its regulations a part of the sanitary code, the Health Department was simply legalizing measures that had already been in operation under successive resolutions of the Board extending over a period of several years. To thoroughly understand the situation, it is important to review briefly the progress of this movement.

The first official action by the Health Department regarding pulmonary tuberculosis was taken in 1889, when a resolution was passed calling upon the consulting pathologists of the Department for a report on the methods to be adopted for the prevention of the disease. A communication on this subject was prepared by T. Mitchell Prudden, Henry P. Loomis, and Hermann M. Biggs, and presented to the Board. In this special emphasis was laid upon the following facts:

1. That tuberculosis is a distinctly preventable disease.
2. That it is not directly inherited, and
3. That it is acquired by direct transmission of the tubercle bacillus from the sick to the healthy, usually by means of the dried and pulverized sputum floating as dust in the air.

The measures then suggested for the prevention of the spread of tuberculosis were (1) the security of the public against tuberculous meat and milk, attained by a system of rigid official inspection of cattle; (2) the dissemination among the people of the knowledge that every tuberculous person may be a source of actual danger to his associates, if the discharges from the lungs are not immediately destroyed, or rendered harmless; and (3) the careful disinfection of rooms, and hospital wards, that are occupied, or have been occupied, by phthisical patients.

It was determined first to follow the second suggestion only, namely, the dissemination of knowledge among the people regarding the nature of tuberculosis. Circulars were therefore prepared and widely distributed, and certain measures were taken in regard to the recording of houses in which tuberculous patients had died. No further action was taken by the Health Department until 1893, when a communication was received from the Pathologist and Director of the Bacteriological Laboratory, which contained statements and recommendations that were adopted on February 13, 1894, and were, under resolution of the Board, put into force.

These declared positively that tuberculosis is a communicable disease, that all cases presented at hospitals or dispensaries must be reported to the Board of Health, and that rooms in which patients have died of tuberculosis must be disinfected to the satisfaction of the Board before they can be again occupied. A notice was also printed and affixed to the entrance doors of infected apartments in tenement houses, declaring the premises infected and forbidding the rooms to be occupied until disinfected. Nothing could be better calculated to impress the ignorant denizens of the tenement houses with the fact that tuberculosis is a communicable disease than these official placards. These people were already accustomed to similar notices in connection with smallpox, typhus fever, diphtheria, etc., and the signature of the Board of Health carried with it a feeling of terror.

The Board, since that time, has been carrying on this work, acting under the resolutions of that date. More than 4000 cases of tuberculosis were reported during the first year; something over 5000 during the second year, and nearly 8500 during the third year. The premises where these cases occurred, and also the premises where deaths from tuberculosis occurred—numbering nearly 6000 each year—have, so far as has been possible with the force of inspectors at command, been inspected, the families and the individuals have been instructed, and, where premises which have been occupied by consumptives have been vacated by death or removal, they have been placarded to prevent reoccupation, when it was considered necessary, and orders have been issued for their renovation. Very great progress has been made in this matter during these years, and in certain of the tenement-house districts of the city information in regard to the nature of pulmonary tuberculosis, and the methods of its extension, and the means to be taken for its prevention, have been widely disseminated. It is reported by inspectors that among the more intelligent of the tenement-house population more or less efficient precautions are being now observed. Moreover, the statistics of the Health Department in regard to pulmonary tuberculosis show that there has been a steady and continuous fall in the death rate for a series of years, altogether amounting to more than thirty per cent., and it is the firm conviction of the Board that by the intelligent enforcement of proper measures this disease may be, within a few years, restricted to far narrower limits, and that the enforcement of these measures will in nowise work a serious hardship to the sufferers from it. Great obstacles have been met with in the prosecution of this work, owing to the lack of facilities for the care of cases of pulmonary tuberculosis, which are of such a nature as to be dangerous sources of infection to other persons; and also owing to the fact that, as the action of the department was under resolution, and not a provision of the Sanitary Code, the recommendations and requirements could not be legally enforced. Many cases were being constantly reported by the inspectors where persons in the poorest circumstances, or under the most unfavorable hygienic conditions, suffering with advanced pulmonary tuberculosis, persistently ignored or neglected the simple and obviously necessary precautions for the prevention of the spread of the disease. Large numbers of other persons were frequently being exposed to most dangerous infection in workshops and in the crowded tenement-house districts, and the department was helpless to interfere. To enable the Board to enforce these salutary regulations, they were incorporated as a part of the Sanitary Code on January 11, 1897, as follows:

"Section 225. That pulmonary tuberculosis is hereby declared to be an infectious and communicable disease, dangerous to the public health. It shall be the duty of every physician in this city to report to the Sanitary Bureau, in writing, the name, age, sex, occupation, and address of every person having such disease who has been attended by, or who has come under the observation of such physician for the first time, within one week of such time. It shall also be the duty of the commissioners or managers, or the principal, superintendent, or physician of each and every public or private institution or dispensary in this city to report to the Sanitary Bureau in writing, or to cause such report to be made by some proper and competent person, the name, age, sex, occupation, and last address of every person afflicted with this disease who is in their care or who has come under their observations within one week of such time. It shall be the duty of every person sick with this disease, and of every person in attendance upon anyone sick with this disease, and of the authorities of private institutions or dispensaries, to observe and enforce all the sanitary rules and regulations of the Board of Health for preventing the spread of pulmonary tuberculosis."

It has evidently not been the policy of the Health Department in the past, nor, we infer, is it its purpose in the future, to inspect or interfere in any way with those cases of pulmonary tuberculosis which are under the regular supervision of a medical attendant, especially those dwelling in private houses, which are not active sources of danger to others. It has been stated that the *sole source* of *danger* in pulmonary tuberculosis is the *sputum*, and that if this be properly destroyed, a consumptive may be free of danger to his most intimate associates.

The importance of a special hospital for the care of cases sufficiently advanced to become sources of infection is presented by the Board in its announcement, as:

The importance of provision for the separate care of persons suffering from other forms of communicable disease has long been universally admitted, and the maintenance of separate hospitals for these diseases is justly recognized as one of the most effective of the sanitary measures for securing public safety. There are most urgent reasons why similar measures should be adopted in dealing with pulmonary tuberculosis.

A large experience in this matter has shown that in institutions devoted solely to the care of consumptives, the general welfare of the patients is more easily fostered, the risk of fresh infections more certainly diminished, and the chances for recovery more surely enhanced than in general hospitals in which all classes of cases are received.

We believe that such an institution in charge of the Health Department would secure all these advantages, without encroaching in any way upon the province of the institutions *now caring for such patients*, and would contribute, as no other measure can do, to the success of the endeavor of the Department, now pursued in the face of hopeless obstacles, to curtail the ravages of pulmonary tuberculosis in New York.

This is the feature of the announcement that has met with criticism on the plea that it is not the function of sanitary authorities to treat disease, and therefore no hospital is necessary. It is submitted in all candor that the treatment of the disease is not the object aimed at in this recommendation, but a place in which the extremely infectious cases can be isolated from the healthy members of the community and have proper surroundings and care. To accomplish this in some instances, and these the most urgent, it is necessary to be armed with the authority of the law, and in order to keep patients under restraint the Health Board must have a hospital under its own control. The Commissioners of Charity have no authority to restrain a patient or compel him to remain in a hospital against his will.

THE DISPENSARY AS A FINANCIAL INSTITUTION.

THE real objection raised to the present method of conducting dispensaries is based upon the fact that from the objector's standpoint they do too much business and he too little. The natural wish is, therefore, to reduce the amount of the business done by the dispensaries in order to increase that done by the doctors. A very little thought will convince any one that it is hopeless to persuade the dispensary physician to change the present system. The number of men who will be willing to spoil their own dispensary classes for the rather uncertain possibility of benefiting some other physician must ever remain small; and attempts of this sort if engaged in by a few dispensaries will result principally in building up the attendance at the other dispensaries.

To be absolutely candid, running a dispensary is a business, and not so bad a business either. Ten cents from every patient will almost pay the running expenses of a large dispensary if only simple appliances and inexpensive drugs are used. Add to this the allowance granted by the city, and the deficit remaining to be made good by private contribution is not great.

Now if it is really desired by the medical profession of New York City to cut down the number of dispensary patients the way to do it is to cut off the revenue of the dispensaries. This might be done in two ways: the mildest measure would be to withhold city aid from any dispensary which accepted from the patient a fee for treatment, for medicine, or for dressing. A more radical measure would be to make it illegal for any dispensary to accept any money from a patient. Either of these plans is practical and could be carried out without difficulty. The result would be that some of the dispensaries would be obliged to close altogether, while others would have to curtail expenses and treat fewer patients. The effect upon the patients who did attend would be that they would recognize in the dispensary a *charitable* institution. At present most of the patients who pay ten cents think that they have settled their full obligation. It is no uncommon experience to hear some woman at a dispensary confess with mortification that she has no money and will have to accept charity, when for weeks she had been coming joyfully with her ten cents, holding her head erect as befitting one who pays her just debts.

This is not an argument either for or against dispensary practice, but simply a suggestion regarding ways and means. These institutions occupy after all somewhat the same relation to the physicians of the city as the department stores do to the small shop keepers. If it is the determined wish of a majority of the profession materially to reduce the amount of business done by the dispensaries an efficient and thoroughly business-like way, to accomplish it is by putting in force some such financial measure or measures as those suggested above.

RECENT PROGRESS IN DERMATOLOGY; SOME PARASITIC DISEASES.

IT is a good thing for our peace of mind that we are provided with limited vision so that we cannot see all the forms of life that exist about us and on us, ready at all times to invade our bodies. J. F. Payne of London, in a recent address (*Brit. Jour. Dermat.*, 1896, viii, 267) applies the apt term "Bacterial nurseries" to those regions of the body that are prone to harbor parasites, such as the skin between the toes and under the nails, the scurf of the scalp, the perineum, scrotum, and adjacent parts. In all these locations the skin is more or less constantly warm and moist and well fitted to give lodgment to microörganisms which are harmless until the proper conditions arise to render them actively virulent. Impetigo contagiosa derives its highly contagious character, according to Payne, from a gradually evolved virulence. A healthy young person, for instance, may have a wound on his foot. Influenced by the saprophytic cocci of the part this sooner or later suppurates. Cocci cultivated in this local inflammation become sufficiently virulent to produce vesicles and pustules in the neighborhood; these, transferred by the nails to the face, develop classical impetigo contagiosa lesions. Transference from one case to another in rapid succession heightens the virulence of the organisms and produces the specific disease.

Eczema is not regarded by Payne as a parasitic disease. Its bilateral symmetry, its manner of spreading, often appearing suddenly in widely separated parts, the marked influence on it of nervous disturbances and digestive disorders, and the absence or rarity of instances of contagion separate it sharply from the class of parasitic diseases, such as ringworm. But without doubt certain clinical features may be impressed upon it by saprophytic organisms which, in consequence of some preliminary disturbance of nutrition, acquire pathogenic properties. Like impetigo contagiosa, eczema is prone to start from the scalp, feet, and genitals, and it is probable that all eczemas are locally infective. It is rare that the microbes found in eczema—and several of them have been found—acquire virulence enough to become contagious to others.

It is only in the past few years that we have been wakened from our dream that ringworm was caused by one parasite, the trichophyton. But now each year seems to bring to our knowledge new varieties of microörganisms giving rise to the clinical picture of ringworm. Fox and Bloxall (*Brit. Med. Jour.*, 1896, viii, 241, *et seq.*) have been investigating the subject along the road blazed out by Sabouraud. They find that his microsporon is readily recognized, and causes about eighty to ninety per cent. of all the ringworm cases in London. They have found it not only in scalp cases, but also in cases on the glabrous skin of the face, neck, and shoulders. This form of fungus affects children chiefly.

Krosing (*Archiv. f. Derm. u. Syph.*, 1896, xxxv, 184) on the other hand, after an exhaustive study, says that Sabouraud's division of the trichophyton into large and small spored varieties is not justified, as the spore formation varies in the same fungus and in the same culture. With this also falls the division of the human trichophyton according to location. Both deep and superficial inflammations are caused by the same fungus, and we therefore cannot diagnose the clinical forms from examination of the fungi. Waelsch (*Archiv. f. Derm. u. Syph.*, 1896, xxxv, 23) declares that the trichophyton grows not only in the hair but also in the corneous cells of the hair follicle, and by its growth sets up inflammation, a folliculitis and perifolliculitis. The amount of inflammation depends upon the anatomical structure of the part, being most intense in the beard where the subcutaneous tissues are loose, and the blood supply abundant. The tightness of the subcutaneous tissues of the scalp makes it a poor ground for deep inflammation. Pus cocci take no part in the inflammation set up by the trichophyton. Like Krosing, he holds that it is not possible to differentiate specific forms of ringworm as due to specific forms of fungus. In this view he is supported by M. Pelagatti (*Monatshft. f. prkt. Derm.*, 1896, xxiii, 515) who says that it is impossible to tell from the clinical appearances of a lesion to which fungus it is due, as every variety of fungus can produce the same clinical form.

While it is somewhat discouraging to find such varying opinions emanating from such skilled observers, it is evident that there is more than one form of fungus causing ringworm.

We have been familiar for a great many years with the microsporon furfur as the cause of chromophytosis, or tinea, or pityriasis versicolor, but nevertheless it has been found impossible to obtain a pure culture of it. This has at last been done by T. Spietschka (*Archiv. f. Derm. u. Syph.*). Not only has he made a pure culture of it, but he has reproduced it by inoculation in one case, and from the fungus in this case made a pure culture.

George Thomas Jackson, M.D.

ECHOES AND NEWS.

A Cure for Rinderpest in Cattle.—Dr. Koch announces from South Africa that he has found an antidote or prophylactic for rinderpest in cattle. It consists of the injection of serum into the veins, which gives immunity within a fortnight.

German Drugs.—The *German Journal of Pharmacy* estimates that 117 new remedies were introduced on the market during the four months of May, June, July, and August, 1896. It is very evident that serum-therapy has not entirely monopolized the field yet.

Surgeon-Dentists Exempt from Jury Duty.—A bill has been introduced in the New York Legislature extending to all surgeon-dentists the same exemption from service as trial jurors that is now accorded to physicians, pharmacists, and veterinarians throughout the State.

The Medical Profession in France.—It is proposed in some of the French medical journals to establish among the doctors of France a professional Court of Honor. The functions of this order will be to purge the profession of disreputable members, to suppress disreputable practices, and in general to take the part of a keeper of the professional conscience.

The Bacillus of the Bubonic Plague Easily Destroyed.—Dr. Roux, head of the Pasteur Institute, Paris, gives the encouraging news that the bacillus of the bubonic plague has little power of resistance, and that all antiseptics kill it. It dies at a temperature of 140°F., but it retains vitality in the soil, which is an explanation of the fact that it is never eradicated from Eastern countries.

Anti-diphtheritic Serum in Solid Form.—The latest announcement of Behring is that he will in future supply serum in solid form. The advantages are that no antiseptic will be necessary to preserve it. Thus modified it will not undergo any change for an indefinite time, and the accidents which sometimes resulted from its use, and which were attributed to the antiseptics, will be avoided.

Precautions Against the Plague.—The Russian government has forbidden pilgrimages of Moslems to Mecca through Russian territory, and has also forbidden Russian Christians to visit the shrines in the East. These measures are taken as a precaution against the bubonic plague, and cordons of officers have been assigned to closely watch the Russian frontiers to prevent the introduction of the plague.

Professor Nocard of Paris an Authority on Tuberculosis.—The Faculty of Medicine of Paris has conferred the Lacaze prize amounting to $2000 upon Professor Nocard for his recent work upon tuberculosis. His original contributions to this subject consisted in discovering, in connection with Roux, that the tubercle bacillus could be cultivated in a glycerin medium so that its properties could be studied and tuberculin obtained in large quantities.

The Decadence of the Cigarette.—An anti-cigarette bill has passed the Lower House of the Tennessee Legislature by a unanimous vote. It prohibits absolutely the sale of cigarettes and of cigarette papers in the State. The law goes into effect May 1, 1897. A wide movement is on foot in the public schools of the country whose aim is not only to enlighten the children regarding the injurious effects of cigarettes but also to secure signatures to a written pledge of abstinence from their use.

New York Academy of Medicine.—At the meeting of the Academy held February 4th, the retiring President, Dr. Joseph D. Bryant, made some valedictory remarks, and the President-elect, Dr. Edward G. Janeway, was inaugurated. In his address Dr. Janeway suggested the desirability of establishing a pathological laboratory at the Academy for the service and convenience of the members, and recommended that a committee be appointed to consider the vexed question of medical experts in criminal trials and bring the subject before the Academy for general discussion.

The New York Hospital for Ruptured and Crippled.—We learn from the thirty-third annual report of this institution that 10,592 new patients were recorded for treatment during the year ending September 30, 1896. It is also stated that the extraordinary demands made upon the Hernia Department since the operation of laparotomy has become so popular makes it very difficult to supply with abdominal belts and supporters of all kinds the large number of patients requiring them. It is noticeable that a large proportion of the imperfect abdominal walls resulted from operations for appendicitis.

Fortunes of British Physicians.—*The Practitioner* records the following amounts devised by doctors in England who have died during the year 1896: Dr. Patrick Fraser, $2,100,000.00; Sir John Erichsen, $450,000.00; Sir George Humphry, $400,000.00; Dr. Samuel Holdsworth, $265,000.00; Dr. William Statten, $200,000.00; Dr. George Harley and Sir William Moore each $125,000.00; Sir George Johnson and Sir Russell Reynolds each about $60,000.00. The comment is made by the same authority that these fortunes were not made so much by the accumulation of fees as by judicious investments.

The Weber-Parkes Prize and Medal.—We learn from the *British Medical Journal* that in 1894, Dr. Hermann Weber presented to the Royal College of Physicians of London, the sum of £3000 to found a prize for the best essay on some subject connected with the etiology, prevention, pathology, cure or treatment of tuberculosis, in memory of the late E. A. Parkes, M.D. The prize is to be awarded triennially, and the value will be about £150 ($750). A bronze metal will accompany the prize, and a second medal will be awarded to the second best essay. The competition is open to the medical profession of all countries. The first award will be made this year.

Death of Dr. Bourgoin.—Dr. Edwin Bourgoin, the famous French chemist, died in Paris February 11, 1897. He was one of the most distinguished of French physicians. For some time he ardently opposed the theories introduced by Pasteur. He was born in 1836. His medical education was received under the Faculty of Medicine and Pharmacy at Paris, and in 1879 he was named as Professor of Pharmacy in the latter institution. He was elected a member of the Academy of Medicine the same year. In 1867 he was chosen as head of the Children's Hospital, and in 1881 as a member of the Public Council of Hygiene. He was decorated with the ribbon of the Legion of Honor in 1880, and was made an officer of the Legion in 1891.

Government and State Aid Asked for.—A report adopted at the second Pan-American Congress, held last November at Mexico City, has been presented to the United States Senate regarding a Department of Public Health for the United States. The bill proposes gathering information from every possible source relating to public health, sanitation, food, and diseases. It asks the appointment by the President of a statistic and compiling secretary, at a salary of $8000, with an assistant at $5000. The information thus gathered is to be published for issuance each week. The committee in addition recommends the passage of uniform laws, National and State, regulating the importation, exportation, sale, and inspection of food, laws regarding the sale of drugs and chemicals, sanitation of railroad cars, hospitals, and jails, and an appropriation of money by the States and General Government for the scientific investigation of public health matters in this and foreign countries.

The Annoyances of European Quarantine.—A traveler who arrived at Trieste on an Austrian Lloyd steamer a few weeks ago has involuntarily acquired a large amount of the sort of fame which results from the baffling of public curiosity. He was from Bombay, and the Italian authorities were intensely alarmed lest he had brought the bubonic plague along with him. At first they refused to let him land at all, but finally permitted him to do so, on condition that he submit to a dreadfully thorough course of disinfection and would promise to continue his journey in a private car into which he and his baggage should be carefully sealed. To this he consented, and in his prison on wheels, which was placed between the engine and the baggage car, he started for the north. At Undine, the formalities of inspection and fumigation were again carried out. At Verona the process was repeated, and then Milan's officials tried their hands at the work before sending him on toward the Swiss frontier. There they were still more cautious, for they refused to let him enter the republic on any terms whatever. So back to Milan he was taken, still in the sealed car. Here the farce ended, for after a fifth examination and disinfection the man was released and permitted to go where and as he chose.

CORRESPONDENCE.

"A REVOLT AGAINST THE LODGE."

To the Editor of THE MEDICAL NEWS.

DEAR SIR: The editorial published in THE MEDICAL NEWS for January 2, 1896, relative to "A Revolt Against the Lodge" was read with much interest, and a hearty response is made to your plea, for we are so unfortunate as to have a doctor (?) here who recently, upon the instituting of a new beneficial lodge, offered to examine the first twenty-five free of cost. It is needless to add that the offer was accepted, and that he is now the official examiner.

What chance have we, who are anxious to better our condition, when such a freebooter is in our midst? He is beyond the pale of censure, for he was expelled from our County Society some six years ago for inciting a malpractice suit.

This is merely a line of congratulation; I write you that you may know of a new evil in the contract field of lodge work. Yours truly,

J. O. HOWELLS, M.D.

BRIDGEPORT, OHIO,
January 6, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

MEETING OF THE PHILADELPHIA PEDIATRIC SOCIETY—UNILATERAL TUMOR IN CHILDREN—RECOVERY FROM CERVICAL PACHYMENINGITIS—PASTEURIZATION OF MILK—NOMA—ENURESIS—MEETING OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY—THE HOSPITALS, THE DOCTORS, AND THE COMMUNITY—DR. J. P. MANN APPOINTED PROFESSOR OF CLINICAL ORTHOPEDICS IN THE MEDICO-CHIRURGICAL COLLEGE.

FEBRUARY 13, 1897.

AT a stated meeting of the Philadelphia Pediatric Society, held February 9th, Dr. J. P. Crozer Griffith presented two cases of unilateral tremor in children. In neither instance could a satisfactory explanation be given of the etiology of the condition. In the first patient shown, a lad of about ten years of age, the tremor, presumably post hemiplegic, could be demonstrated as being always present in the left hand and arm, but could not be shown in the foot and leg of the same side except on attempted motion, when, as in the arm, it was plainly evident as a coarse ataxic movement. The tremor in the second case involved the left arm and leg, and side of the neck, was always present, and was made coarser and more striking on attempting volitional movement.

A case of recovery from cervical pachymeningitis was shown by Dr. Alfred Hand, jr. This case in its inception several years ago had been variously diagnosticated as hysterical paraplegia, amyelotrophic lateral sclerosis, etc., but its course and development, with the added symptom of pain, finally confirmed the diagnosis first given.

Dr. J. P. Crozer Griffith in a paper on Pasteurization of milk, explained the theory and practical workings of the Freeman Pasteurizer. An outer receptacle of tin contains a measured quantity of water which is brought to the boiling point. In this are placed eight or ten zinc cylinders containing bottles, holding the milk to be Pasteurized, which stand in water the temperature of the room. The whole apparatus is covered and set away out of a draft on a non-radiating substance. In about fifteen minutes the boiling water has conveyed enough heat to the milk to raise it to 155 ° F., the best heat for this process, and it is maintained at that temperature for the remaining time. The bottles are now taken out and cooled under running water, then put away on ice to be used as desired. Pasteurization by this apparatus Dr. Griffith considered the best means of rendering milk free from bacterial infection, but when this or similar appliances could not be had, he believed sterilization to be the better process, for, in unskilled hands the regulation of the temperature could not be relied upon.

A case of noma was reported by Dr. C. H. Weber. The points of interest in the case were (1) the inability to establish any causal factor for the lesion; (2) the remarkable vitality of the patient, which was fully sustained until the growth had assumed such proportions as to mechanically interfere with the taking of nourishment; (3) the remarkable rapidity of the growth and its intractability to treatment; (4) the fact that, although involving almost one-half of the area of the face, the median line had not been traversed.

In a paper on enuresis, Dr. J. H. McKee, after reviewing the physiology of the act of micturition, divided the causes of this condition into (1) malformations of any part of the genito-urinary tract that would interfere with the proper functionating of this system; (2) developmental or acquired disease of the central nervous system which would tend to disturb the normal equilibrium of the centers of control; (3) functional disturbance arising from such conditions as rickets, tuberculosis, or valvular heart disease; (4) nutritive disorders, such as disease of the gastro-intestinal tract; (5) faulty metabolism from any cause.

The practice of removing the prepuce with the idea that nocturnal incontinence of urine could be remedied in all cases by this means, Dr. McKee considered unwise in the extreme. For the treatment of this condition the remedy of the underlying cause should be effected, and the proper tone given to the spinal centers by alternating hot and cold douches to the spine, strychnin in tonic doses, and electricity, if required. As a simple remedy, but one that had proved remarkably successful in his hands, Dr. J. F. Prendergast mentioned cold douches to the spine just before retiring. In a series of almost 100 cases of nocturnal incontinence of urine treated by this method alone, full control of the bladder had been established within a very short time after the commencement of the treatment.

At a meeting of the Philadelphia County Medical Society held on February 10th, Dr. Edward Jackson read a paper on "The Hospitals, the Doctor, and the Community," which evoked considerable discussion without a conclusion being arrived at that would satisfactorily adjust the relationship between these three components of our civilization. This question as to how medical charity can be bestowed so that only the deserving shall be benefited and at the same time the interests and welfare of the medical profession shall be best protected, is one of vital importance, especially to the young and struggling practitioner.

That many a patient is treated free of charge, especially in the dispensaries, who is well able to pay for medical attendance, is a matter almost too well known to repeat. That positions in dispensary or hospital practice are never allowed to go begging by the medical profession is another well known fact. Strange though it is that these two conditions should exist at the same time, it would appear as though the latter is the outcome of the young practitioners having to accept the first postulate as the inevitable, with the full knowledge that though his pocket may suffer for the present, the experience gained by so doing may, and in the majority of cases will, offset this loss in the future. A remedy that might prove effectual in the dispensary evil, at least of sufficient merit to warrant a trial, was suggested by Dr. John B. Roberts. The applicants for attendance are treated once, and then told that the treatment will not be continued unless they can return with a form filled out by two reputable citizens to the effect that they are deserving of the charity they seek.

At a meeting of the Board of Trustees of the Medico-Chirurgical College held on February 8th, Dr. James P. Mann was unanimously elected clinical professor of orthopedics in that institution. For a term of years Dr. Mann has been connected with the Jefferson Medical College as chief of the out-patient orthopedic department and instructor in orthopedic surgery.

OUR PARIS LETTER.

[From our Special Correspondent.]

RANVIER'S LECTURES ON CICATRIZATION OF WOUNDS—THE DREAD OF BEING BURIED ALIVE—URATIC AND PHOSPHATIC BONE DEPOSITS DEMONSTRATED BY THE ROENTGEN RAY—ANALYSIS OF FRENCHMEN OF GENIUS FROM LOMBROSO'S STANDPOINT—THE X-RAY NOT BACTERICIDAL.

PARIS, January 26, 1897.

Professor Ranvier at the College de France is just finishing a course of lectures explanatory of his recent work on cicatrization that has been extremely interesting. In a note to the Academy of Sciences in 1891, he published the result of his observations on the repair of wounds of the peritoneum and gave his beautifully simple description of what he considered, at the conclusion of his experiments, to be the real explanation of the healing of tissues by first intention—not an organization of the exudate that had been poured out; not a budding of the connective tissue elements of the part (for that would not occur for three or four days, and healing by first intention takes place in twenty-four to forty-eight hours), but a real healing by primary adhesion. He believes that the connective tissue cells in the edges of the wound send out prolongations along the scaffolding of fibrin that has been formed by the more or less hemorrhagic exudate which has been poured out as a consequence of the irritation of the wounded tissues, and these prolongations meet and fuse to form the cicatrix.

He now returns to the subject with the study of non-penetrating wounds of the cornea. Here, too, there seems to be, normally, no production of new elements in the process of repair. Nature seems to make use of a simple mechanical process to obtain the elements necessary to fill the gap between the edges of the wound. Ranvier first noticed that the cornea at the edges of the wound seemed to be thinner than at other points. He then demonstrated by accurate micrometric measurements that this thinness at the edges was real and not apparent. This condition of affairs exists within a couple of hours after the wound has been made, and when the surface of the wound, if it is small in size, is already covered with a thin but complete layer of epithelial cells. The appearance is just the opposite of what would be found if there had been an irritative hypertrophy for purposes of repair. The origin of the layer of cells covering the wound was then traced to the exit through the severed edges of the irregular corpuscular bodies that exist in the cornea, an agglutinative material that exuded at the same time serving to fasten them to each other and to the wounded tissues. The mechanical pressure caused by the slight change of curvature of the cornea in the neighborhood of the wound is the prominent factor in causing the liquid and cellular exudate. The whole subject is beautifully worked out in detail and the slides that illustrate his lectures are striking examples of scientific experimental pathologic histology. The suggestion is inevitable that the process of cicatrization may be a much simpler one than it has been considered to be up to this time, and that though it is one of the subjects on which perhaps most work has been done there remain interesting discoveries yet to be made.

Once in a generation, Sir Henry Thompson says, there comes over the public a wave of awesome dread of being buried alive. This present generation in France, or at least in Paris, would seem to be in the midst of this wave just now. It is almost unusual to pick up a newspaper of any kind which does not contain a discussion of this gruesome subject from some point of view. Certain medical men have not hesitated to add to the interest of the public by allowing themselves to be interviewed on the subject and have reaped the benefit of the free advertisement that accrued. Even French medical men are but human. I should expect by this time that interest'in the subject would begin to be aroused in America, for there is an epidemiology of ideas as well as of disease and, like empire, they are prone to take a westward course. The really interesting thing that has come out in the excitement is the expression of opinion of Professor Brouardel, the Dean of the Faculty and distinguished author of a number of works on legal medicine. He said in an interview the other day that after a careful investigation into all the reported cases of 'buried alive' in medical and other literature there was only one case that seemed absolutely authentic, and but very few other cases where there seemed to be doubt.

Professor Potain showed a series of Röntgen photographs at the *séance* of the Academy of Sciences January 18th that demonstrates the diagnostic value of the X-ray in a medical way from a new standpoint. The cases were a series of gouty bone lesions and the photographs showed that ends of the affected bones were infiltrated with some substance that was much more permeable to the Röntgen ray than is ordinary bone material. A series of complementary experiments made with urates and phosphate of lime contained in boxes, showed this same characteristic difference of absorptive powers in the skiagraphs. Potain suggests that the diagnosis between chronic rheumatic and gouty lesions, often so difficult to make with certainty, may be rendered much easier by this method.

One would be inclined to say that our French brethren have not as lively a sense of the ridiculous as one finds among the Anglo-Saxons. The calm way in which they analyze, for the benefit of the public generally, the character and writings of their living men of genius for the purpose of pointing out any stigmata of degenerescence that may be discoverable, strikes one as not exactly the sympathetic way we indulge the same class of people.

There was an article on Alphonse Daudet not long ago, written from this standpoint, and though in a friendly spirit, it was too much of a vulgarization of the intimacies of private life to be in good taste. Dr. Toulouse's book on Zola, a more extended essay of the same character, has, as might be expected from the well-known character of its subject and the divided opinions held with regard to his work, attracted a great deal of attention. This was doubtless the main purpose of the writer and the written about, so the book must be pronounced a success. Zola seems to have submitted to a most detailed examination, and even to have permitted a rather lengthy series of psycho-physical, psycho-sensorial, and sensorio-physical experiments. The data thus furnished to a sympathetic scientist only serve to bring out clearly the fact that it is genius and not degenerescence that is the basis of the striking if somewhat peculiar character whose writings have attracted such world wide attention, and not always from the standpoint of *pure* literature. The same data however in the hands of the famous Lombroso, the Italian criminologist, serve to demonstrate very clearly the stigmata of psychical degenerescence that lie at the root of Zola's extreme naturalism. Lombroso's review of Toulouse's book, in recent numbers of *La Semaine Médicale*, have been rather spicy reading, although I should not imagine their perusal to be very pleasant to the subject who so ingenuously submitted himself to psychological dissection. To judge from Lombroso's conclusions, given the psychological elements that go to make up Zola's mental being, it was inevitable that his literary productions should have taken on the extreme naturalistic tendencies that they have. In the course of the review there is some discussion of Zola's mental peculiarities and his psycho-physical faculties that are too plain and bluntly outspoken to be pleasant. I do not not think that the notion would be as taking in America as it is here in

Paris, but I feel sure that a detailed account of the items that go to make up the mental balance of some of our popular writers would attract a good deal of attention. *Voila!* a field for some of our rising young physiologio-psychologists!

Notwithstanding all that has been said of the pretended bactericidal properties of the X-ray, mainly, it must be confessed, in what the French call political journals, no serious experiments have ever confirmed the pretended discoveries. On January 22, Professors Achard and Lannelongue, in a report to the *Société des Hopitaux*, announced that they had not been able to detect the slightest influence either on the rapidity of growth or the virulence of cultures of microbes exposed for long periods to the action of the ray.

Occasionally, reports appear of cutaneous irritation due to long exposure to the X-ray, sometimes of an extremely unpleasant character, though not very serious. There have even been reports of a depilatory action, so that there would seem to be either a certain personal idiosyncrasy in the matter, of which it would be necessary to take account before exposing the patient to the action of the ray for a long *séance*, or else certain receptive states of the skin or general system that may yet give a clue to therapeutic uses of the wonderful penetrative power of the actinic agent whose history has just begun.

Here seem to be two words that there might be use for in English. The hybrid compound 'tissue-therapy' is replaced by many writers by 'organo-therapy' but it is not the organs themselves that are therapeutic but their secretions, and so the word 'opotherapy' has been suggested by Grasset, *οπος*, meaning sap secretion. Some one spoke the other day of 'the misoneism of the veteran practitioner' and it seems such an improvement on our blunt 'old fogyism' or the now more than suspicious 'conservatism' that there would seem to be a long felt want to be filled by it.

TRANSACTIONS OF FOREIGN SOCIETIES.

London.

STRANGULATED HERNIA IN CHILDREN—THE INFLUENCE OF HEREDITY IN NEUROSES—A CASE OF "NON-CALCIFYING PLASTIC OSTITIS."

AT a meeting of the West London Medico-Chirurgical Society, January 8th, PAGET discussed six cases of strangulated hernia in infancy and early childhood. All were males and four of them were less than eight months old. The hernia was in every case an inguinal one, and in three of the six cases the cecum was in the sac.

KEETLEY formulated the following rules for similar cases: (1) Operate from the first with the full intention of bringing about a radical cure; (2) cut straight down on the neck of the sac and open it and the peritoneal cavity at the same time; (3) after returning the bowel, separate the sac high up from the cord, tie it there, and then sew up the hernial opening so that it will only just permit the cord to pass through. Preserve the heat of the child, and give a minimum amount of an anesthetic.

MCCANN believed that very few cases ever require operation. He has seen well-marked examples recover after suspension of the child. He objected strongly to taxis, whether under an anesthetic or not. Taxis is an important cause of gangrene of the bowel. He thought that many of these cases were due to intestinal distention, the result of improper feeding.

At a meeting of the Neurological Society, held January 14th, SAVAGE considered the subject of *heredity in neuroses.* He traced the ideas of heredity from the Darwinian to the Weismann periods, but he could not admit that there is no power of transmitting acquired capacities. He felt that misunderstanding had arisen from the idea of the direct transmission of fully developed habits, whereas all that is transmitted is a capacity or previous disposition for developing these habits. In the transmission of instincts it was shown that some are transmitted but never developed. There may be in fact potential abilities which are never evoked because no stimulus is present. It is thus with some neuroses which lie dormant until some special conditions rouse them into activity. There are also cases in which special forms of mental disorder occur only at certain ages.

The relation of heredity to the neuroses must be traced in various ways, one of the best being a study of the relation of the nervous disorders which often occur in the offspring of the insane and markedly neurotic. The lack of nerve power of various degree is shown by defect of one or the other of the mental factors which may give rise to various forms of idiocy or smaller degrees of mental weakness. Ordinary mania does not seem to have a sufficiently definite physical basis for it to be transmissible. Melancholia, on the other hand, is especially associated with general bodily ailment and is often met with in generation after generation in certain families. The individuals in some families seem to die out in mind before body, and in some there seems to be a capacity for passing on a tendency of recurring melancholia which in the end becomes chronic. Dementia in a different way is often associated with the old age of certain families.

What in some cases looks like direct heredity is after all the result of nervous instability associated with dread and expectancy. This is well seen in some cases of puerperal insanity and in the suicidal tendency recurring in certain families. Heredity is an important factor in the production of neuroses, but their transmission depends as much on the stimulus which evokes the symptoms as on the heredity, and it is this which is so important for the consideration of the physician. There is hope in changing the surrounding of the neurotic and in thus breaking morbid habit or preventing its development.

At a meeting of the Pathological Society, held January 19th, PITTS and SHATTOCK gave the details of an unusual case for which they proposed the name of "*non-calcifying plastic ostitis.*" At the age of thirty-one the patient fell and struck her right leg. Three months later the knee became stiff and painful. She grew worse and was treated in several hospitals. The leg was wasted and flexed at the knee at almost a right angle, the tibia and fibula being displaced backward. The head of the tibia was much enlarged and was movable at the epiphysis upon the shaft, without crepitus but with severe pain. Eight years after the accident amputation was performed. The patient recovered from the operation and regained fairly good health. The tibia alone of the bones of the body was diseased. Its upper half had undergone a uniform transformation into a minutely cancellar bone-like substance so devoid of earthy salts that it was as pliable as India rubber. The medular cavity was obliterated. Microscopically it consisted of trabeculæ which were surrounded by a definite layer of osteoblasts. The spaces between the trabeculæ were occupied by a highly cellular tissue with but few leucocytes.

Pitts and Shattock found it impossible to class the specimen under the heading either of osteomalacia or osteitis deformans. They considered it an osteitis occurring in the adult of a pronounced plastic character unaccompanied by a calcification. Hence the name was proposed of " non-calcifying plastic ostitis."

KANTHACK and SPENCER looked upon the specimen as a new growth, either an osteosarcoma or a " myeloma."

BUTLIN thought the specimen illustrated a stage in ostitis deformans at which the bones are plastic and the deformity takes place. He thought there was no evidence for regarding this specimen as a tumor, because secondary growths had not occurred.

Berlin.

TWO CASES OF PULSUS DIFFERENS—THE APPLICABILITY OF MUSCULAR EXERCISE IN CASES OF CARDIAC DISEASES.

At the session of the Union for Internal Medicine, held January 11th, GERHARDT reported two cases of pulsus differens occurring in his clinic. One was in an old woman who presented symptoms of mitral stenosis and insufficiency and nephritis. The pulse in the left radial artery was smaller than that in the right. It differed from the right, also, in number, beating 98 times to the minute, while that of the right side beat 110 times. The other case was also that of an old woman, with paralysis agitans and paralysis of the right leg following an apoplectic stroke. In her case the right pulse was 112 and the left 92. At autopsy the right subclavian artery was found to have a circumference of 19.5 millimeters, while the left measured only 8 millimeters.

Speaking of the value of muscular exercise in cases of cardiac disease, FRAENKEL said that mechanical treatment of heart troubles might be advisable for three reasons: (1) In order to stimulate the heart itself; for example, in cases of neurosis of the heart. (2) To favor a widening of the peripheral vessels; for instance, in arteriosclerosis. (3) In order to reduce the peripheral resistance of the arterial system which occurs, for example, in those persons who grow very stout. The plan recommended by Hirschfeld of reducing below normal the nourishment of a cardiac patient must not be taken as a general rule. In valvular disease and arterio-sclerosis its use ought to be most carefully watched.

LEYDEN called attention to the fact that the term "a weakened heart" is used with two very different meanngs. In one class of cases the heart is really weakened, that is, degenerated, as a result of anemia, etc. In such cases the muscle of the heart has no unusual work to do, but it cannot perform its normal function. In the other class of cases the heart has more work to perform than normal, (valvular disease, arterio-sclerosis) and although its muscle may be intact it fails to perform its extra labor. In the first class of cases digitalis is poorly borne, for under its influence the muscle of the heart is soon weakened still more; in the second class, however, digitalis acts quickly and satisfactorily.

Increased muscular activity in the first class of cases is in order only during convalescence. In the second class it is entirely inapplicable except in so far as it reduces rather than increases the work of the heart. Free and deep breathing is especially important for patients with cardiac disease, and to obtain this the abdominal contents should occupy the least possible space. Hence small meals and laxatives are to be recommended.

SOCIETY PROCEEDINGS.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF NEW YORK.

Meeting Held November 25, 1896.

DR. SENECA D. POWELL made some remarks concerning the use of the Taylor splint in the treatment of fractures of the clavicle, and showed a patient on whom the splint had been used with most satisfactory results. The young man, who had suffered a fracture of the outer third of the clavicle from a bicycle accident, had been in great pain and agony for several hours after the injury, due to the overriding of the fragments and the spasm of the muscles. He experienced complete relief immediately after the application of the splint, and within a few hours was able to go about the same as before the accident.

Dr. Powell demonstrated the use of the splint, showed the manner of its application, and contrasted its utility with that of other forms of dressing for fractured clavicle, and concluded that this was the nearest approach to the ideal dressing.

DISCUSSION.

DR. GREENE said that he thought that this was an ideal splint, and was apparently well adapted to all fractures of the clavicle. He had tried all the other methods, and intended to try this one.

DR. PAGE thought the splint represented the best idea he had ever seen incorporated for such a purpose. He, too, had tried all forms of apparatus, but the trouble with most of them was that they caused pain, and must frequently be removed. He was favorably impressed with the splint and with the demonstration that Dr. Powell had made.

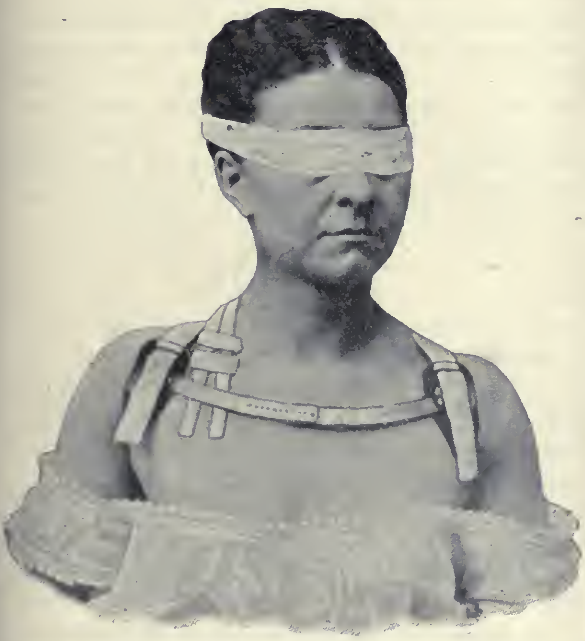
DR. DESSAU remarked that it seemed to him simple and efficacious. He thought that it might cause discomfort on account of the bar in front, but such discomfort would not be any greater than with the other methods which were usually recommended.

It seemed to Dr. Goffe that the prominent feature which recommended itself to him was that it allowed the patient free use of his arm, and thus contributed materially to its value. Heretofore, he had been satisfied with the Sayre method, but he could see the value of this over Sayre's, at least for some cases.

Dr. Bulkley was also very favorably impressed with the demonstration that Dr. Powell had made, and thought that it would be possible to make use of this apparatus for patients with stooping shoulder.

Dr. R. A. Murray thought that the splint would not meet all the indications which the ideal dressing for fracture of the clavicle should. Sayre's apparatus, to be sure, frequently allows the occurrence of a slight amount of deformity, although a measurement of a series of normal clavicles, and clavicles that had been fractured, showed that deformity was as common in the first as in the second, and such findings were in keeping with other measurements that had been made, such as on the lower extremity of a large number of individuals, in which, not infrequently, a considerable discrepancy in the length was found. He related a case in which Moore's dressing was used most effectively when others had failed. In fact, his experience had led him to favor this dressing above all others. Most dressings for fracture of the clavicle cause chafing and pain. Taylor's splint has the advantage that it does not do this.

Fig. 1.



Application of the Taylor splint for fractured clavicle. Front view.

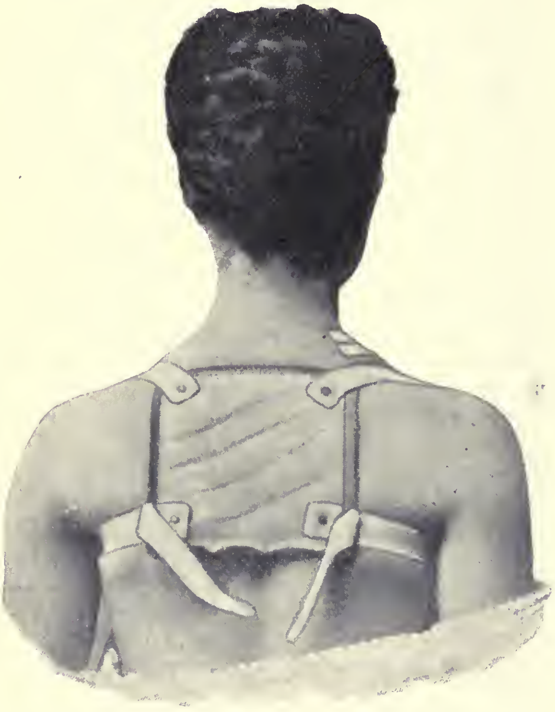
Dr. John F. Erdmann said that the excellent result in this case was due to the fact that the line of fracture was near the coracoid process. The splint had been applied to the inner side of this process, and the result was that there was no forward movement in the scapulæ. He was surprised at the amount of displacement which had taken place in this case, as he had never seen overriding of the fragments to the extent of an inch in fractures at this site. When the bone was fractured in the outer third, he thought that the figure-of-8 dressing would produce quite as good results as the application of this splint would. It did not seem to him that the Taylor splint would be applicable to fractures of the inner third of the clavicle. He related a case which he had recently seen thirty-six hours after the fracture had been produced, in which the pain was very great, but it was quickly relieved by allowing the patient to lie flat upon a hard bed to obtain the aid of gravity in reducing the deformity, and apposition of the fragments was then possible. Good results followed the use of the figure-of-8 bandage. In the case related by Dr. Powell he was a little surprised at the length of time the pain continued after the various dressings cited.

Dr. J. Blake White, after speaking of the general indications to be fulfilled in the treatment of fracture of the clavicle, agreed with Dr. Erdmann in what he had said about fractures of the inner third of the bone. In the case demonstrated by Dr. Powell, he was struck by the immediate relief that had followed the application of the splint, and the facility with which the splint had kept the shoulder in place. It was a matter of surprise that a device so useful, so easily adapted, and so perfect, had not been adopted heretofore. The entire absence of deformity in the case demonstrated showed its applicability, at least in some cases.

Dr. A. M. Phelps confessed himself pleased with the instrument and the result of its application in the case demonstrated. He remarked that it must not be forgotten that there are very different kinds of fracture of the clavicle. The attachment of the sterno-cleido-mastoid muscle and the attachment and insertion of the subclavius muscle have very much to do with the result that follows fracture of this bone. In fracture of the outer third, near the insertion of the subclavius, the fragments are easily held in place by almost any dressing. In fracture of the inner third, however, the matter is very different, and he did not see how such a splint as the one demonstrated could act upon that favorably. In these latter fractures the shoulder must be raised, and this instrument apparently did not do that. In fracture of the outer third of the clavicle, he thought it was ideal. To his mind, both Moore's and Sayre's dressings were radically wrong, when used without the axillary fulcrum or pad, because they pulled the shoulders together. In fractures of the inner third of the clavicle, the elbows should be pulled back so as to make traction on the fragment through the pectoral muscle; then, with a pad in the axilla, the shoulder was thrown outward. The external and internal fragments of the fractured ends would be coaptated by raising the shoulder. To accomplish this, in both Moore's and Sayre's dressings, a pad should be put in the axilla, and the elbow pressed against the chest and drawn backward and fastened with adhesive plaster. This lengthens the clavicle. Then, if another strip is put under the elbow and over the opposite shoulder, the shoulder is lifted, and the requirements for the treatment of such a fracture will be met. One drawback to the use of the splint that had been exhibited was that it was not available when one lived remote from the instrument-maker, and it was in these cases that three strips of adhesive plaster and the pad in the axilla became so useful. Everyone knew that in fracture of the clavicle in women it was an esthetic necessity to get a good result, and to please them with comfortable and agreeable dressings. Adhesive plaster often caused some discomfort, and he would recommend for them the dressing demonstrated, with proper modifications for fractures of the sternal end. In using the strips of adhesive plaster, he insisted that they should not be disturbed for four weeks. If it was necessary to apply fresh ones, they should be put on over the old, as often as the fracture was not in perfect coaptation.

DR. HENRY LING TAYLOR described the evolution of the Taylor clavicle splint. The anterior portion was simply the "front piece" of the improved apparatus for Pott's disease, which was added to the original Taylor brace by its inventor, Dr. C. Fayette Taylor, about the year 1876. Soon afterward the front piece, buckled to a pad at the back, was used by Dr. Taylor as a clavicle splint in several cases, with good results; later it had been used by the speaker, and in a number of cases had worked admirably. Its features were its comfort, efficiency, and the freedom it permitted the patient, who often could use the arm, though it was advisable to wear a sling for a few days. It was different in principle from any clavicle splint with which he was familiar, and was, in effect, as Dr. Powell had said, an artificial clavicle, or rather an artificial shoulder girdle. He could corroborate what Dr. Powell had said as to the ugliness of the fracture in his son's case, the helplessness of the patient, and the rapidity and completeness of the relief afforded by the application of the splint. The splint, when first applied, seemed too long, but had to be lengthened a couple of inches as the fragments were drawn into place by its application, which threw the shoulders out and back. Whether this splint was applicable to all clavicular fractures, experience would decide.

FIG. 2.



Application of the Taylor splint for fractured clavicle. Rear view.

DR. POWELL, in conclusion, said that it was necessary for him to take exception to two or three remarks that had been made, particularly in reference to the applicability of the splint to fractures of the inner third of the clavicle. In these cases, the displacement was generally of the outer fragment, and not of the inner. It was his belief that the application of the Taylor splint prevented displacement of these fragments, as the splint brought pressure to bear on the anterior portion of the scapula, and on the anterior part of the humerus, directly over its muscular attachments. It protects the outer fragment, and brings it into line with the other part of the fractured segment. Its great advantage is, as he had already pointed out, that it relieves pain, lessens irritation, and allows the patient to get about almost immediately after its application. He was of the opinion that it is as useful for fracture of the inner third as for fracture of the outer third; in fact, fracture in any part of the clavicle.

REVIEWS.

THE PHYSICIAN'S VISITING LIST FOR 1897. Philadelphia: P. Blakiston, Son & Co.

BLAKISTON'S VISITING LIST for 1897, appears in its customary compact and useful form. Physicians using it will find it serves its purposes admirably.

THE PROFESSION OF MEDICINE: ITS STUDY AND PRACTICE; ITS DUTIES AND REWARDS. By CHARLES WEST, M.D., Fellow and Late Senior Censor of the Royal College of Physicians, etc. London: Kegan, Paul, Trench, Trübner & Co., Ltd., 1896.

AN essay of reminiscence, of counsel, and advice, from one who has trod the path which doctors travel for sixty-three years, is bound to receive a respectful hearing from the members of the profession. And even if the thoughts expressed and the hopes held forth are but those which govern most sensible and honest men, and are largely rhetorical, the fact that a Nestor speaks induces one to incline the ear and silently to hearken to the old man's words of wisdom.

Extended analysis of this little book is not required. Dr. West urges broadness of study, the culture of the arts, and a healthy physique as requisites for a physician. Contrary to our own Holmes, he sees no objection in the young doctor's acquiring reputation as a *litterateur*, or as a musician. The necessary attributes of kindness, sympathy, morality, and honesty are dwelt upon pleasantly, and the aged author sees in the consciousness of work well done ample reward for the trials and rebuffs of practice. No man can be worse, and many will be better, for having read this earnest appeal.

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ORIGINAL ARTICLES.

THE PHYSIOLOGICAL ACTION AND THERAPEUTIC USES OF YEAST NUCLEINIC ACID, WITH SPECIAL REFERENCE TO ITS EMPLOYMENT IN TUBERCULOSIS.[1]

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Nucleins and Nucleinic Acids.—I have elsewhere spoken of nucleins as follows: "Physiologically, nucleins may be said to form the chief chemical constituents of the living parts of cells. Speaking broadly, we may say that the nuclein is that constituent of the cell by virtue of which the histological unit grows, develops, and reproduces itself. It is the function of the nuclein of the cell to utilize the pabulum within its reach. It must be evident that those tissues most abounding in cellular elements contain relatively the largest amount of nuclein. It must also be seen that it is by virtue of their nuclein that the cells of various organs and organisms possess and manifest their individual peculiarities. We should, therefore, expect to find that the nuclein of the yeast cell is not identical with that of the bacillus tuberculosis, and that the nuclein of the spleen differs from that of the thymus gland. The number of kinds of nuclein is limited only by the variety of cells. Nuclein is the chemical basis of that part of the cell designated by the histologist as the nucleus, sometimes called chromatin on account of the readiness with which it absorbs and holds coloring agents. It is the nuclein of the bacterium which takes up and retains stains, and it is on account of the fact that the nuclein of the bacillus tuberculosis differs from that of other bacilli that we are able to distinguish the former from the latter by its tinctorial properties. Differences in reaction with staining agents so plainly seen under the microscope are only outward manifestations of less apparent and more important differences in chemical composition.[2]"

Chemically, the nucleins are complex, proteid bodies, especially characterized by the large amount of phosphorus which they contain. Nucleins can be split up by the action of dilute mineral acids into albuminous bases and nucleinic acids. The nature of the base and the acid obtained in this way will vary with the nuclein in which they originate. Yeast nuclein differs in both its basic and its acid constituents from leuco-nuclein as obtained from the thymus gland. The nucleinic acids on being further broken up by the action of dilute mineral acids yield the so-called xanthin bodies, and here again it is true that the products obtained will depend upon the kind of nucleinic acid acted upon. One nucleinic acid may yield only adenin, and for this reason it may be designated as adenylic nucleinic acid, while another may furnish xanthin abundantly, possibly to the exclusion of other bases, and this may be termed xanthylic nucleinic acid. Kossel has demonstrated some of the chemical differences between nucleinic acids from diverse sources. Yeast nucleinic acid yields, on being broken up by the action of dilute mineral acids and heat, guanin and adenin; while testicular nucleinic acid furnishes adenin, hypoxanthin, and xanthin; and thymus nucleinic acid gives adenin only. These are what might be called gross differences. It is probable that finer distinctions exist between members of the same group. I have frequently observed that different samples of yeast vary not only in the amount of nucleinic acid yielded, but that the products differ in the intensity of their germicidal action. Of course this may be due to differences in other constituents of the yeast cells, and the greater or less difficulty of obtaining the nucleinic acid in an approximately pure condition. In the first year of my work on this subject I used baker's compressed yeast, and sometimes I wholly failed to obtain a nucleinic acid with distinct germicidal properties, while at other times the result was quite satisfactory, although at no time did I secure a product equal in germicidal strength to that subsequently prepared from pure cultures of brewer's yeast. It is within the range of possibility that by an investigation of the different varieties of yeast cells and with due attention to the conditions under which the cells are grown, we may secure not only a richer yield of nucleinic acid, but an acid of greater germicidal strength.

The difference in chemical composition and in germicidal action between nucleinic acids from different kinds of cells is, in some instances at least, accompanied by differences in physiological action. Thus, while Lillienfeld[1] has found that thymus nucleinic acid coagulates the blood when injected intravenously in certain quantities, it will be shown in this paper that a much larger per cent. of yeast nucleinic acid may be injected intravenously without any such effects.

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[1] This paper contains the material used in special lectures delivered to the students of the Department of Medicine and Surgery of Michigan University, November, 1896.

[2] The Nucleins and Nuclein Therapy; Annual Address on Medicine. Transactions of the Michigan State Medical Society, 1894.

Certain substances which are histologically and functionally nucleins do not yield any xanthin base as a decomposition product. These are called paranucleins. Some of these are antecedents of true nucleins. Thus, the yelk of the egg contains a paranuclein, which may be isolated by removing the accompanying proteids by peptic digestion. This substance does not yield a xanthin base, but during the process of incubation it develops into a true nuclein.

Generally speaking, nucleins and nucleinic acids are insoluble in dilute acids and soluble in dilute alkalies. They are insoluble in alcohol. The last mentioned fact has not, however, prevented the quite extensive employment by the profession of alcohol said to contain nuclein. It is needless to say that any beneficial effects obtained by the use of this preparation should be attributed to alcohol and not to nuclein. The terms "nuclein" and "nucleinic acid" are frequently used interchangeably. In fact, it is by no means always easy to determine whether in a given kind of cell the nucleinic acid exists free or combined with some basic substance; and it is extremely difficult to obtain the nucleinic acid in any quantity wholly free from albuminous substances, and as nucleinic acid combines with any albuminous substances present, the chemist is by no means always certain which of the terms "nuclein" or "nucleinic acid" will the more honestly fit a given product.

Pure yeast nucleinic acid contains about nine per cent. of phosphorus. While a small quantity can be prepared in a sufficiently pure state to yield this amount I have so far found the preparation of such a pure article in quantities large enough for any extensive physiological experimentation or therapeutical use impracticable. The purest nucleinic acid which has been used in the work detailed in this paper contains a fraction less than seven per cent. of phosphorus.

The Theory upon which these Studies of Nucleinic Acid have been Based.—The working hypothesis which I developed in beginning my researches on the nucleins, and which may be found in my address before the Medical Section of the first Pan-American Medical Congress,[2] may be condensed to the following propositions:

1. The phagocytic theory of Metschnikoff, in so far as it teaches that the polynuclear white blood-corpuscles are active agents in preventing or retarding the multiplication of pathogenic germs in the body, is true.

As Metschnikoff has stated, there is no claim that there are not other agents which may also combat the progress of disease.

2. The polynuclear corpuscles do not eat the bacilli, but they destroy the germ by virtue of the chemical action of some constituent or secretion.

3. The germicidal properties of blood-serum, demonstrated by the researches of Fodor, Nutall, Buchner and others, are due to a substance, or to substances, that originate in the polynuclear white blood-corpuscles.

4. The natural resistance of the body to bacterial disease will be strengthened by a physiological increase in the production of polynuclear white blood-corpuscles.

5. This increase in the polynuclear corpuscles may be induced by introducing into the animal the most distinctive constituent of these cells, which is nuclein.

The foregoing statements were formulated in 1891 and I then began my studies on nuclein from yeast and from certain animal glands. In 1892 the first experiments were made on healthy and tuberculous guinea-pigs, and in May, 1893, tuberculous patients were treated for the first time with this agent.

The Germicidal Action of Nucleinic Acid.—In May, 1893, a paper by Novy, McClintock, and the writer,[1] detailed experiments by which we demonstrated the germicidal action of testicular, thyroid, and yeast nucleins upon bacillus venenosus, staphylococcus pyogenes aureus, and albus, and bacillus anthracis. Additional details of similar experiments were given in the address read before the Medical Section of the first Pan-American Medical Congress, already referred to. The paper by McClintock and myself[2] read before the same congress, demonstrated that the germicidal properties of blood-serum are due to the presence of nuclein. In February, 1894, Kossel[3] published a paper which confirmed our results.

It is unnecessary to go into any detailed statement concerning the germicidal action of yeast nucleinic acid at this time, as any one desirous of doing so can consult the publications referred to. There is, however, one point which seems to me to be of special importance, in view of certain recent German investigations. While yeast nucleinic acid is a powerful germicide, it is not equally potent with all kinds of bacteria. Indeed, there are some germs on which this acid can scarcely be said to manifest a germicidal effect. This is true of certain putrefactive germs. This is of interest, in view of the discovery of Pfeiffer,[1] that the blood-serum of an animal, immunized against a specific bacterium, becomes decidedly more germicidal to that germ than to any other. This discovery is now being utilized in attempts to distinguish the typhoid and cholera bacilli from others which closely resemble them morphologically and tinctorially. It would seem from this that the germicidal constituent of the blood-serum can be trained to act more energetically upon a given bacillus. Pfeiffer states that the germicidal constituent of the blood-serum of his immunized animals is not a nuclein, and this makes the fact that yeast nucleinic acid manifests its germicidal properties in a selective way all the more interesting.

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[1] *Ueber Blutgerinung Zeitschrift f. physiologische Chemie*, B. 20, S. 89.

[2] "The Principles of Immunity and Cure in the Infectious Diseases." Transactions of the first Pan-American Medical Congress. Vol. 1, p. 152.

[1] The Germicidal Properties of Nucleins. MEDICAL NEWS, May 30, 1893.

[2] "The Nature of the Germicidal Constituent of Blood-serum." Transactions of the first Pan-American Medical Congress. Vol. 1, p. 238.

[3] "Weitere Beiträge zur Kentniss der Nucleinsäuren," *Archiv. f. Anatomie und Physiologie*, *Physiologische Abtheilung*, 1894, S. 194.

The Effect of Treatment with Yeast Nucleinic Acid Upon the Polynuclear White Blood-Corpuscles.—As early as 1892, my colleague, Dr. Huber, kindly made for me a large number of counts of the white corpuscles in the blood of both healthy and tuberculous guinea-pigs, with and without injections of nuclein. He has since repeatedly made like determinations on the blood of my patients. I have elsewhere[2] stated his results, as follows:

(1) "The subcutaneous injection of nuclein increases the number of white blood corpuscles; (2) this increase occurs in both healthy and tuberculous persons; (3) with like quantities of nuclein injected, the increase varies with the person; it may be slight and it may be three-fold; (4) this increase occurs principally in the polynuclear cells; (5) it is evident, as a rule, as soon as the third hour after treatment, and generally disappears by the forty-eighth hour."

The following details of one series of counts may be of interest. All the persons tested in this series were tuberculous: [See next column.]

Patient.	Total No. of white corpuscles per c.m. before treatment.	Total No. of white corpuscles per c.m. after treatment.	Total increase per c.m.	Per cent. of increase.	Intervals between treatment and count.	Strength of nuclein solution used, per cent.	Amount of solution used.	Method of administration.
Miss B..	8421	12,395	3974	47+	3h. 45m.	1	ʒ i	h[1]
Miss F..	7617	13,866	6249	82+	2h. 45m.	1	"	"
Miss H..	4545	11,713	7188	158+	4h. 15m.	1	"	"
Mrs. R..	5000	11,578	6578	131+	3h. 10m.	1	"	"
Miss S...	9333	14,084	4751	50+	2h.	1	"	"
Mrs. D..	9564	10,947	1383	14+	3h.	5	ʒ iii	m[2]
Miss M..	5238	17,368	12,130	231+	2h. 30m.	5	"	"
Mr. M...	7520	10,138	2613	34+	2h. 30m.	5	ʒ ii	"
Miss A..	5977	8533	2556	44+	2h.	5	"	"
Mrs. N..	8713	12,959	4246	48+	2h. 30m.	5	"	"
Miss S...	8478	9189	711	8+	4h.	5	ʒ i	"
Mrs. R..	8441	9500	1059	12+	3h.	5	ʒ ii	"

[1] h=hypodermically. [2] m=by mouth.

Recently Hahn,[3] working under the direction of Buchner, in the Hygienic Institute of the University of Munich, and using the nuclein prepared by Parke, Davis & Co., the same as that employed in the treatment of the cases reported in this paper, has gone one step further than I have in this investigation. He has shown that nuclein not only causes a hyperleucocytosis, but that the defibrinated blood taken from the animal while in this condition of hyperleucocytosis, induced by the nuclein, has its germicidal properties increased. His experiments were made upon dogs, and are detailed as follows: "First, some blood was taken from the animal and the number of leucocytes in the arterial blood was determined. Then the animal received a hypodermic injection of some leucocytosis-producing substance. For this purpose, some albuminous body, as albumose or nuclein, the latter in the form of a yeast nuclein, supplied us by the firm of Parke, Davis & Co. A nucleinic acid from the same source has given us good service. Since large quantities of this preparation can be employed, it was easy in a short time to double the number of leucocytes. At the same time, there was generally an elevation of temperature, which, with this agent, was variable. In dogs, the elevation was seldom more than from 1° to 1½°. When the number of leucocytes had reached near the double of the normal, a second portion of blood was drawn. At first we allowed an interval of only from five to six hours, later, from twelve to fifteen hours between the injection and the withdrawal of the second portion of blood. Even when the leucocytosis had begun to fall the results were not altered. The experimental proof that the leucocytosis was caused by the injection of the nucleinic acid was clear. The blood taken in the state of hyperleucocytosis was decidedly more markedly germicidal than the normal blood of the same animal. Control experiments, made morning and evening, without injection, demonstrated that the effect of the withdrawal of blood alone on an increase in the leucocytes was but small."

Table I illustrates the results obtained:

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[1] "Ein Neues Grundgesetz der Immunität." *Deutsche med. Wochenschrift*, 1896, S. 97. Also, *Zeitschrift f. Hygiene und Infectionskrankheiten*, B. 20.

[2] "The Nucleins and Nuclein-Therapy." Transactions of Mich. State Medical Society, 1894, p. 49.

[3] "Ueber die Steigerung der naturalischen Widerstandsfähigkeit durch Erzeugung von Hyperleukocytose." *Berliner klin. Wochenschrift*, September 28, 1896.

TABLE I.

STAPHYLOCOCCUS PYOGENES AUREUS.

		Number of Colonies on the Plates.					
		Immediately.	After 2 Hrs.		After 5 Hours.		After 24 Hours.
			Absolute.	Per cent.	Absolute.	Per cent.	
a	2 c.c. normal blood	6272	512	8.2	210	3.3	Innumerable
a1	2 c.c. normal blood	4992	1538	30.8	235	4.7	"
a2	Same as a & a1 heated to 55°.	6912	....	....	Innumerable	...	"
b	2 c.c. leucocyte blood ..	7744	194	2.5	89	1.1	7040
b1	2 c.c. leucocyte blood...	4096	139	3.4	94	2.3	Innumerable
b2	Same as b & b1 heated to 55°.	7552	8576	....	Innumerable	...	"

The results obtained by Hahn in a case of tuberculosis in man are shown in Table II.

TABLE II.

BACTERIUM COLI.

		Number of Colonies on the Plates.					
		Immediately.	After 2 Hrs.		After 5 Hours.		After 24 Hours.
			Absolute.	Per cent.	Absolute.	Per cent.	
a	2 c.c. normal blood	3904	1664	42.6	256	6.6	Innumerable
a1	2 c.c. normal blood	4544	1792	39.6	384	8.5	"
a2	Same as a & a1 heated to 55°.	2112	5120	....	Innumerable	...	"
b	2 c.c. leucocyte blood...	3986	320	8.0	14	0.4	"
b1	2 c.c. leucocyte blood...	6080	1472	24.2	56	0.9	450
b2	Same as b & b1 heated to 55°.	7552	7680	....	Innumerable	...	Innumerable

Hahn states that in man the number of white corpuscles per c.m. must be increased to at least 13-1400 before there is any marked increase in the germicidal action. In one of my cases, not included in the table given, the number reached 45,000. This, however, was exceptional, and followed a very large injection. Moreover, it was a patient in the last stages of the disease, and with numerous cavities, as was demonstrated positively later at *post-mortem*, and Stein and Erbmann[1] have shown that in this condition there often exists a marked leucocytosis.

It must be admitted from the evidence before us that yeast nucleinic acid increases the number of polynuclear white blood-corpuscles. Hahn also found the increase to be among these elements, and that it intensifies the germicidal properties of the blood.

Is Yeast Nucleinic Acid an Antitoxin?—With our present knowledge of the infectious diseases, we may hope to find curative agents in one or the other of two classes—(1) those which increase the germicidal action of the blood, and (2) the antitoxins. Indeed, the infectious diseases may be divided into two groups, one of which includes those diseases which we may reasonably hope to cure by antitoxins, and the other those which must be reached by directly or indirectly destroying the germs. The diseases for which antitoxins have been found—diphtheria and tetanus—are the best representatives, possibly the only members, of that class. Cholera and typhoid fever may finally be placed in the same group by the discovery of their antitoxins, but, in my opinion, this is not highly probable. In fact, the researches of Pfeiffer, already referred to, render it quite certain that cholera and typhoid fever are not to be combated successfully with antitoxins. The toxin diseases have the following characteristics:

(1) Their germs live in the animal body relatively only a short time; at least they manifest their virulence for only a short period. The bacillus of diphtheria may continue in the child's throat for weeks, but only for a few days does it manifest for that child any virulent activity. (2) The germs are located superficially on a mucous membrane or under the skin. (3) The germs are confined to relatively a very small area. (4) The tissue-changes induced by the growth of the germs are relatively of but little import. Diphtheria may cause death by filling the larynx with membrane, but this is not the usual cause of death in this disease, and, if it were, tracheotomy and intubation would save life. (5) Within a few days at most, the bacteria elaborate and pour into the body fatal doses of a chemical poison; then the bacteria cease, in that person, to manufacture more of the poisons. (6) These diseases are acute intoxications. The dangers to life, both those which are functional and those which are histological, are due to the chemical poison. The antitoxin does not destroy the germ, and the germ, after it has produced poison for a few days at most, is, for that individual, harmless.

The other group of diseases possesses the following distinguishing characteristics: (1) The germs may live and continue to manifest their virulence for a long time. The bacillus tuberculosis may slowly multiply and continue its existence in the same individual for many years. (2) The germs may be located either superficially or deeply; they may be confined to a small, or may extend over a large area. (3) Their germs elaborate chemical poisons for weeks, sometimes for years. An antitoxin would be possessed of no curative action in these diseases. It might be of temporary value, but the bacteria would continue to produce the poison. To cure these diseases, we must destroy the bacteria. All attempts to utilize chemical germicides in the curative treatment of disease have been failures. Our hope lies in the possibility of increasing the normal resistance of the animal body.

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[1] "Zur Frage der Leucocytose bei tuberculösen Processen." *Deutsches Archiv. f. klin. med.*, B. 56, S. 323.

Then there are the acute septicemias—those diseases in which the germs multiply rapidly in the blood. In these also, curative agents will most likely be found in substances which either directly or indirectly destroy the bacteria.

Is yeast nucleinic acid an antitoxin? I think that I can answer this quite positively. McClintock and I have made a long series of experiments on rabbits and guinea-pigs with the toxins of diphtheria and tetanus and yeast nucleinic acid. We have failed to find any evidence that yeast nucleinic acid possesses any antidotal value against these toxins.

The Effect of the Administration of Nucleinic Acid on the Formation and Elimination of Uric Acid.—It was formerly supposed that uric acid resulted from the retrograde metabolism of proteids in the same way as urea is produced. Uric acid was supposed to represent a condition of imperfect oxidation, the completed product of which is urea. On this theory, an excess of uric acid was supposed to indicate the administration of oxidizing agents directly or of those substances which would favor oxidation processes in the blood. It was upon the last-mentioned hypothesis that alkalies were so largely given when uric acid was formed in excess. However, Horbaczewski[1] has shown that the amount of uric acid is increased by the administration of nuclein. This fits in with certain chemical and physiological facts. As has already been stated, the xanthin bases are derivatives of nucleinic acid, and the close chemical, physiological, and pathological relation of uric acid to the xanthin bases is well known. The experiments of Horbaczewski would indicate that the administration of nuclein increases the number of polynuclear white corpuscles, and in the disintegration of these the xanthin bases and uric acid result. If this be true, uric acid becomes the measure, as it were, of cellular disintegration in the body. This theory has been combated with some vigor, mostly upon theoretical grounds, aided by a few experiments upon lower animals. However, the correctness of Horbaczewski's work has been confirmed by experiments made upon man by Weintraub[1] and others. My own observations are in accord with the teaching of Horbaczewski, and I have frequently found an excess of uric acid in the urine after giving large doses of nucleinic acid. I have also, in persons suffering from rheumatic pains accompanied by the so-called uric acid diathesis, found that these pains were greatly intensified by the administration of nucleinic acid. In at least one instance was this so markedly true that the treatment was seriously interfered with and could not be given with the usual frequency. Cases of this nature are, however, judging from my experience, rare among the tuberculous.

Uric acid is not always increased in the urine after the administration of nuclein, but in all experiments on this point, in which proper tests have been made, it has been found that some one or more of the alloxan bodies is increased in amount. Uric acid is only one of the alloxan group, and failure to recognize this fact has led some writers into error which I cannot take the space to point out at this time.

Method of Administration.—In the cases reported in this and the preceding paper, the treatment has consisted of hypodermic injections. I use the syringe of a small aspirator, holding 80 minims. The barrel of the syringe should be long and of a relatively small diameter. The greater the diameter, the more difficult it is to discharge the contents through a fine needle. For the injection of larger amounts than that mentioned above, I have had a long-barrelled syringe, holding 10 c.cm., made. I select small needles, one for each patient, and keep the needles, when not in use, in an Esmarch dish filled with a five-per cent. solution of carbolic acid, and with the name of the patient on the cover. The syringe is kept, when not in use, in a covered glass dish such as is used by bacteriologists, and known as a moist chamber. When the syringe and needle are kept in this way, no sterilization further than that due to the action of the carbolic acid on the needle is needed. The small amount of the acid adhering to the needle does no harm, and possibly may be of benefit, on account of its slight local anesthetic effect. When ready to give a treatment, some nuclein solution is poured into a clean Esmarch dish, the syringe is filled from this, and the needle is taken from its dish between the thumb and finger, touching only the base, and screwed upon the syringe. I prefer the American form of syringe, with the needle screwed on the barrel, to the German form, in which the needle is more loosely attached. The point of injection being selected, the skin is rubbed vigorously with a sponge wet with a five-per-cent. solution of carbolic acid. This rubbing should be well done, and is beneficial in two ways. In the first place, it secures cleanliness, not absolute sterilization, of the part, and, in the second place, the acid slightly anesthetizes the skin. Then, with a firm hand, the needle is introduced deep into the tissue. It is not well to pinch up a fold of the skin between the thumb and finger, as some do in the administration of morphin hypodermically, but with the thumb of the left hand on one side of the point of injection and the fingers of the same hand on the other side, press down and outward, making the skin tense at the point entered by the needle. Having introduced the needle, I inject the fluid very slowly. When the treatment is given in this manner, the pain is not nearly so great as that following the injection of an equal volume of distilled water, as I have frequently demonstrated. I generally inject in the infraclavicular areas, but the interscapular space is equally suitable. The subcutaneous injections should not be made in the arms, because there is not enough tissue, especially on the arms of many consumptives, to accommodate the fluid without painful distension. The injections may be made over the abdomen, on the buttocks, or in the thighs. In fact, they may be made on any part of the body or into any accessible area of mucous membrane. In the treatment of a case of lupus of the nose, I injected into the tissue immediately adjacent, but it was quite painful. In a case of local trouble in the upper portion of the vagina, I have injected through the mucous membrane after cleansing the point selected with a cotton swab saturated with the carbolic-acid solution.

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[1] *Monatshefte f. Chemie*, 1889 and 1891.

[1] "Ueber den Einfluss des Nucleins der Nahrung auf die Harnsäurebildung," *Berliner klin. Wochenschrift*, 1895, S. 405.

The five- and ten-per-cent. solutions may be injected hypodermically, provided the reaction is not excessively acid or alkaline. When properly used, the stronger solutions cause no more pain than the weaker ones.

There is always more or less objection to hypodermic medication, especially when it must be continued for a long time. There are nervous patients who always dread the needle, and it is often inconvenient, sometimes quite impossible, for the physician to give the time to the treatment necessitated by the hypodermic method. I have fully realized these difficulties, and have given attention to the question of the absorption of nucleinic acid when administered by the mouth.

Since nuclein is separated from other albuminous substances by digesting the latter with artificial gastric juice, it has been generally assumed that nuclein wholly escapes peptic digestion. Miescher first obtained nuclein in the residue left after the peptic digestion of pus corpuscles. However, since we have learned that the various nucleins differ so widely in many properties, this question has been re-investigated, with results that do not altogether confirm our previous knowledge. Popoff[1] digested a mixture of acid albumin and yeast nucleinic acid with pepsin-hydrochloric acid. The result was that a portion of the nucleinic acid remained in solution.

A like experiment was made on thymus. This gland, from a calf, was finely divided and separated into three unequal portions. The first portion, constituting about three-fifths of the weight of the entire gland, was digested for one hour with pepsin-hydrochloric acid. The mixture was then filtered, and the amount of phosphorus in both the residue and the filtrate determined after incineration with soda and saltpeter. The residue after extraction with alcohol and ether contained 2.56 per cent. of P. calculated for the dry substance, which weighed 35.5 grams and therefore contained 0.89 grams of P. The filtrate contained altogether 0.243 grams of P. This would indicate that not more than one-fourth of the P. of the thymus passed into solution.

A second portion, constituting about one-fifth of the gland, was submitted to like digestion for two hours. The result was that a greater quantity of the nuclein was thrown out of solution.

A third portion was digested for four hours. This resulted in the precipitation of a still larger per cent. of the nuclein.

Popoff found, however, that nucleinic acid is dissolved in the pancreatic juice.

Gumlich[2] has shown that the administration of nucleinic acid by the mouth is followed by marked increase in the phosphoric acid eliminated in the urine.

The statement of Horbaczewski[3] that the administration of nuclein increases the uric acid eliminated, has been repeatedly confirmed.

In our investigations, as has already been shown, yeast nucleinic acid given by the mouth increases the number of polynuclear white blood corpuscles.

These facts leave no room to doubt the absorption of nucleinic acid from the intestines. However, the dose by the mouth must be very much larger than that required to accomplish a like result given hypodermically. One cannot be certain in a given instance what proportion of that administered by the mouth is absorbed. For these reasons I regard the hypodermic method the more exact and otherwise preferable.

With care, nucleinic acid may be injected intravenously. I have at one time injected 5 c.cm. of a ten-per-cent. solution in this way without any bad results. Intravenous injections are painless, and theoretically this is the ideal method of administration, but a larger number of experiments must be made upon lower animals before the dangers in this method can be accurately measured. Therefore, I do not at present recommend it. I have elsewhere[1], with McClintock and Perkins, reported the employment of very large quantities of solutions of yeast nucleinic acid intravenously in rabbits, and have shown that with care this may be successfully done. Certainly, yeast nucleinic acid differs from leuconucleinic acid, inasmuch as the former does not coagulate the blood when injected intravenously.

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[1] "Ueber die Einwirkung von Eiweissverdauenden Fermenten auf die Nucleinstoffe," *Zeitschrift f. Physiologische Chemie*, B. 18, S. 533.

[2] "Ueber die Aufnahme der Nucleine in den thierischen Organismus," *Zeitschrift f. Physiologische Chemie*, B. 18, S. 508.

[3] *Monatshefte f. Chemie*, 1889 and 1891.

Incompatibles.—Quinin and all the coal-tar antipyretics are to be avoided in the nuclein treatment. Atropin is probably physiologically antagonistic to the action of the nucleinic acids, and should not be given for night sweats in the nuclein treatment of tuberculosis.

Effect of Nuclein on Intestinal Fermentation.—Yeast nucleinic acid has a markedly retarding effect upon fermentation in the small intestines, as we have shown by determining its influence upon the conjugate acids eliminated in the urine.

THERAPEUTIC USES OF YEAST NUCLEINIC ACID.

Acute and Sub-Acute Inflammation of the Upper Air-passages.—I have used yeast nucleinic acid in the form of a spray with compressed air for nearly four years, in the treatment of acute inflammations of the upper air-passages as coryza, tonsillitis, pharyngitis, and non-specific laryngitis, and it has given me better results than any other form of medication I have ever tried. I have employed for this purpose the one-per-cent. solution diluted with an equal volume of a saturated solution of boric acid. This preparation has also been of great service in the treatment of hay fever. It has not relieved all such cases, but it has given complete relief to some, has ameliorated others, and has failed to benefit but few. In hay fever, success is rendered more certain if, after spraying the nose, throat, and larynx thoroughly with the above-mentioned preparation, a small amount of a four-per-cent. solution of cocain be employed, also in the form of a spray.

Typhoid Fever.—The action of yeast nucleinic acid on fermentation in the small intestine induced me to try this agent in typhoid fever. I have had no opportunity to use it in any extensive epidemic of this disease. Dr. Harkin[2] of Marquette, Mich., has reported very favorably upon his results with the one-per-cent. solution in an epidemic of typhoid fever at that place. I have used it only in sporadic cases, and as these vary so widely in their clinical history I am not prepared to draw any conclusions from my experience. I think, however, that it is worthy of more extensive trial and would recommend for this purpose drachm doses of the five-per-cent. solution every two to four hours by the mouth.

In Cancer.—I have tried nucleinic acid in three cases of carcinoma of the breast. All of these had been submitted to operation, the cancer had returned, and the cases were inoperable. The treatment was, therefore, employed as a last resort. Injections were made into the healthy tissue around the growth. There was no evidence of beneficial action in any of these. I have employed similar treatment in two inoperable cases of epithelioma. There was no curative action in these. It is true that I did find a wash of nucleinic acid beneficial in these cases of epithelioma, inasmuch as it destroyed those germs which produced a most disagreeable stench. For this purpose I can commend a five- or ten-per-cent. solution as a wash for the diseased surface. In all of these cases, both of carcinoma and epithelioma, the growths were examined microscopically, and there was no doubt of the correctness of the diagnosis. In a case pronounced a sarcoma by some eminent specialists, nucleinic acid apparently wrought a marvelous cure. The patient, the wife of a prominent physician on the Pacific coast, was brought to her home near Ann Arbor in February, 1895, with what was pronounced a sarcoma of the pelvis. She was greatly reduced in weight and strength, weighing 73 pounds, and being unable to walk across the room. In fact, she was unable to sit up. There was a hard tumor, round and, as correctly as I could estimate, three inches in diameter, easily felt through the vagina, and apparently growing out from the ilium on the left side. The one-per-cent. solution of nucleinic acid was employed in the treatment which was administered by her husband. At first the injections were made directly into the growth through the walls of the vagina by means of a specially prepared needle. Later, the injections were made into the gluteal muscles. Treatment was given daily for six months, and then less frequently for some months longer. The strength and weight of the patient gradually increased, and the size of the growth diminished *pari passu.* By the first of July, 1895, the patient weighed more than ever before, and she was able to walk several blocks. Her husband writes me as follows: "In January, 1896, there was some pain in the left side of the pelvis, and a small hardened mass appeared, quite tender and apparently occupying a fold of the broad ligament. Nuclein was used for about two months, injected into the gluteal region. By May, there was no sign of the trouble and an increase of weight was noticed, as well as an improvement of the general condition. At present writing (October 30, 1896) she weighs 123 pounds, which is about ten pounds more than she ever weighed. She is in good spirits and able to perform ordinary duties." Of course, this growth might not have been a sarcoma. The fact that it disappeared so completely is presumptive proof that it was not a malignant growth, but in a similar case I should certainly try the nuclein again.

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[1] Transactions of the Association of American Physicians, 1896, p. 72.

[2] *Therapeutic Notes*, 1896, p. 30.

Septicemia.—Boise[1] and Hofbauer[2] have reported good results from the treatment of puerperal septicemia with nuclein, the former using my preparation, and the latter that of Hobaczewski. Hofbauer states: "Among the clinical symptoms which were observed during the course of treatment, the following may be mentioned: (1) Effect on the general condition. This was manifested in a very marked and often surprising manner. Patients who previously lay apathetic and half asleep now give a clear and satisfactory answer when questioned as to their condition. Though the temperature remained above the normal, nevertheless the improved appearance and the calm expression of countenance offered a decided contrast to what had previously been observed. At the same time the icteric tint of the skin disappeared, and the appetite was improved. (2) Influences on the local condition. Puerperal ulcers soon took on a healthy appearance and healed. The discharges from the septic uterus rapidly lost their odor and purulent character, and lessened in quantity. The first dose increased the temperature, followed by a gradual decrease. The remissions were longer and more pronounced, and the exacerbations slighter till restoration to the normal resulted.

(To be continued.)

PROLAPSE, PROCIDENTIA, AND INVAGINATION OF THE RECTUM.[3]

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THE indiscriminate employment of the terms "prolapse of the rectum," "procidentia recti," and "invagination of the rectum" has given rise to some confusion in the minds of writers and practitioners regarding these conditions. In the present consideration of the subject the term prolapsus will be restricted to the protrusion of otherwise healthy mucous membrane outside the anus, and this to an extent which shall not include the entire circumference of the bowel. This definition excludes those cases in which internal hemorrhoids make their appearance beyond the anal margin, and reserves for the term "procidentia" the cases in which the entire circumference of the bowel is protruded. Ordinary internal piles may be prolapsed, but, as a rule, this is limited to the pile-bearing area of mucous membrane; under these circumstances the protrusion may involve the entire circumference and yet not be properly included in the term prolapse of the rectum. In procidentia recti the mucous membrane from just within the anal orifice, or this together with the submucosa and muscularis, may appear outside the anus (Allingham). Finally, a condition of invagination occurs. The upper portion of the rectum may descend through the lower part, after which it may or may not make its appearance outside the anus, according to the degree of laxity of the connective tissue. In the first instance the condition would be that of invagination with procidentia, and in the second that of invagination alone.

The chief predisposing cause of the production of these affections is a relaxed condition of the muscular and connective tissue structures of the bowel. Involvement of the submucous connective tissue alone will lead to simple eversion of the mucous membrane, a condition which is not infrequently observed in health, and an exaggeration of which, under the influence of some exciting cause, such as straining at stool, may lead to the pathologic condition known as prolapse. A relaxation of the muscular tissues, in addition, leads to a protrusion of both the entire thickness and circumference of the rectum, and it is only a question of time, when this stage has been reached, when the peritoneal covering of the bowel will have also descended sufficiently to protrude through the anus (invagination and procidentia combined). As an additional factor in the production of prolapse and procidentia, the weakening effect of the loss of connective tissue support upon the muscular apparatus of the rectal outlet must be taken into account. Both the sphincters and levator ani become involved in the pathologic process, and the loss of support which this entails still further increases the tendency to prolapse and protrusion of the superimposed bowel. It is a significant fact that, even in the early stages of these conditions, the finger introduced into the rectum does not, as a rule, meet with that resistance characteristic of the action of the anal sphincters in health. Finally, an abnormally long mesentery has been suggested as a possible predisposing cause. In the normal condition the peritoneal covering of the second portion of the rectum is restricted to its anterior surface, the posterior portion being secured to the sacrum by connective tissue attachments. Under conditions of abnormal development this portion of the gut may be likewise covered with peritoneum, an abnormally long meso-rectum resulting (Allingham).

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[1] "The Treatment of Puerperal Septicemia." Transactions of Mich. State Medical Society, 1896.

[2] *Centralblatt f. Gynæcologie*, 1896.

[3] Read before the New York State Medical Society, Albany, January 27, 1897.

Henoch[1] regards the symptoms under discussion as due to an invagination of the lower bowel in miniature. The lower portion of the rectum is more markedly muscular than that which lies immediately above, which is wider and more lax. The latter again merges into a portion above which is supplied with stronger muscular circular fibers. This last mentioned portion, through contractions of its muscular fibers, is capable of inverting and pushing the middle lax portion down to the anus, from which it finally protrudes.

The experiments of Nothnagel[2] are of interest in this connection. This observer applied a faradic current to a portion of the bowel, and was thus able to produce an invagination by the resulting tetanic contractions. The portion of the bowel in the direction of the anus, which still maintained its normal lumen, was now drawn up over the circulatory contracted portion by muscular action, probably that of its longitudinal fibers. In this artificial production of invagination the tetanic contraction of the gut at the point of irritation serves to fix the place where the invagination begins.[3]

The principal exciting causes during childhood, at which period of life these symptoms are most likely to occur, are conditions of constipation, as well as diarrheal and dysenteric affections, the presence of a rectal polypus and certain forms of ascarides, all of which produce more or less rectal tenesmus. With the occurrence of a certain amount of eversion of the mucous membrane the presence of this acts as an irritant, and provokes still further expulsive efforts after the exciting cause has ceased to exert its direct influence. The yielding of the submucosa, under these circumstances, may only result in comparatively slight prolapse; or, if the preëxisting degenerative changes are pronounced, and particularly if these involve the muscular apparatus to a marked degree, procidentia, and finally invagination, may follow. Adhesions between the reflected layers of the balenopreputial mucous membrane (phimosis), by offering obstruction to the free flow of urine, aided possibly by reflex action, may serve as an exciting cause. In adults, vesical tenesmus incident to the presence of an enlarged prostate, stricture of the urethra, or a vesical calculus, serve as exciting causes. In these diseased conditions of the urinary viscus and its outlet, the muscular apparatus of the ano-rectal orifice becomes weakened by the more or less constant expulsive efforts, with final impairment of their restraining function. Finally, cases occur in which no well defined exciting cause can be determined. Degenerative changes affect the connective tissue attachments of the bowel, the muscular structures, and the final mechanism of the production of the prolapse is incident to the normal efforts of defecation.

The underlying pathologic changes which serve as a basis for the occurrence of the symptoms under consideration are not well understood. Owing to the well known looseness of the submucous connective tissue attachments of the walls of the rectum, it is probable that slight mechanical causes will produce prolapse, and that degenerative changes occur in the muscular and fibrous structures of the floor of the pelvis which support the contents of the latter in their normal position, which serve to lay the foundation for the final stages of the condition. Whether or not the paretic involvement of the sphincters is a result of fatty degeneration due to neural or vascular disturbances occurring in connection with degenerative changes in the connective tissue, or follow as a legitimate result of the pressure of the loosened mass which is gradually being forced down and through the anal orifice from above, is a question that must be considered as still *sub judice.* Chronic inflammatory conditions with infiltration and thickening of the involved structures may occur at any time in the history of the affection.

From what has already been said of the nature and mechanism of production of prolapse, procidentia, and invagination, the clinical appearances may be easily comprehended and the diagnosis made. While these conditions may be met with at any period, they are most apt to occur at the two extremes of life. Simple prolapse is most frequent in childhood and procidentia is most frequently observed in those of advanced years. The first onset of the prolapse may be sudden, in which case it is due to some excessive straining effort. More frequently, however, the onset is gradual, the mucous membrane becoming at first prolapsed, procidentia, and finally invagination occurring as later stages of the condition. In simple prolapse the tumor is small in size, and the protruding mucous membrane appears as bright red folds, between which sulci radiate from the aperture. This is due to the fact that the entire circumference of the bowel is not involved, the principal masses being placed laterally. In procidentia the tumor is much larger, and the sulci are arranged in a direction parallel with the anal margin. The protrusion, in the beginning, occurs only after defecation, and is easily replaced and retained until another act of defecation forces it out again; later on it reappears in the interval, and, owing to the infiltration of the mucous membrane and submucosa, and the resistance offered by the sphincter, complete replacement is not always easily accomplished. Usually, however, thickening of the parts and weakening of the muscular apparatus advance *pari passu*, until finally the mass is more easily returned than it is retained. Friction of the clothing, or T bandage usually worn to support the mass, results in abrasion of the mucous membrane, from which bleeding may occur; trophic disturbances may lead to ulceration. In addition, both a mucopurulent discharge and anal bleeding may occur without constant protrusion of the mucous surfaces. In advanced cases constipation and diarrhea alternate. Fecal incontinence may be present. More or less pelvic distress is complained of, and in some cases pains in the loins and thighs. In males, the dragging upon the bladder and urethra may produce difficulty in micturition.

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[1] *Vorlesungen über Kinderkrankheiten*, 4th edition, Berlin, 1889, p. 527.

[2] *Specielle Pathologie und Therapie*, Bd. 18, p. 298, Wien, 1896.

[3] *The International Medical Annual*, 1891, p. 419.

The diagnosis may be confirmed by an inspection of the parts. While the protrusion of internal hemorrhoids is usually associated with more or less prolapse of the mucous membrane covering the sphincters, and in some instances that which lies immediately above, this condition can be easily differentiated from true prolapse. The presence of hemorrhoidal tumors, with their livid color, as well as an increased firmness of the mucous membrane, are such striking signs that there can be no excuse for error in this particular. In the case of a child, a polypus may complicate the diagnosis. This, however, may be usually isolated, and its base of attachment identified. In children, a colo-rectal invagination may occur independently of a prolapse or procidentia. In such cases, the occurrence of sudden pain, with symptoms of collapse, intestinal obstruction, and the passage of blood and mucus preceding the appearance of a protrusion at the anus, will prevent the two affections from being confounded. In incomplete or partial prolapse, and before the occurrence of complete relaxation of the sphincters, vascular stasis of an imprisoned portion of the mucous membrane of the bowel may result from efforts at contraction of the irritated muscles, and sloughing of the parts follows. On the other hand, relaxation of the sphincter to the stage of complete insufficiency may precede the occurrence of the gangrene, in which case the latter is to be attributed to trophic nerve disturbances, or inflammatory stagnation (endarteritis obliterans). This process of circular sloughing constitutes one of nature's efforts at cure.

In procidentia recti both serious and important complications may occur. In invagination, the involved peritoneum sometimes becomes the seat of inflammatory changes, which are followed by obliteration of the peritoneal pouch. In simple prolapse this adhesive inflammation does not occur, and the protruded portion of the peritoneum retains its relations with the general peritoneal cavity. The pouch of peritoneum may be the sac of a hernia and contain portions of small intestine, an ovary, and, exceptionally, the bladder. Even other viscera have been found similarly involved. The intestine may become strangulated in the sac, and an "anus preternaturalis in ano" result (Esmarch). Spontaneous rupture of the rectum may occur as a complication. In cases collected from the literature by Quénn, no history of ulceration preceding the rupture was obtained. In one case which came under the personal observation of this surgeon, microscopic examination revealed inflammatory changes in the rectal tissues.

In view of the fact that the conditions usually occur in weak and feeble children and in debilitated adults the exhibition of tonics, and change in the habits and occupation of the patient, are indicated, and constitute appropriate measures of treatment. The diet must be regulated and constipation avoided. Moving the bowels in the recumbent position will sometimes prevent the occurrence of the prolapse. When the affection is due to any of the remediable exciting causes mentioned, such as the presence of a contracted prepuce, rectal polypus, parasites, stone in the bladder, or any condition of the urinary outlet producing straining efforts, these must be first removed before a cure can be brought about. Reduction may usually be accomplished by the patient himself, if an adult, in recent cases. If the surgeon is called in, with the patient in the knee-elbow position he may succeed by spreading a round piece of dry lint or coarse table linen over the protruding mass, and, after oiling his fingers to facilitate its subsequent withdrawal, push the mass, linen and all, into the rectal cavity. If this fails he may roll a small square of paper into the shape used by grocers in making cone-shaped packages, and after oiling its interior, place the apex of the cone in the sulcus, introduce his finger in its interior, and by steady pressure reduce the protrusion and at the same time force the cone into the rectum. The lint or paper cone may remain until the next act of defecation. If it becomes necessary to employ an anesthetic, the surgeon should be prepared to carry out one of the methods of radical cure. After reduction the buttocks should be strapped together with broad and long strips of rubber adhesive plaster to prevent reprotrusion. Cold water enemata are sometimes of service in preventing recurrence of the protrusion. Astringent injections are of but slight benefit, and may increase the irritation. If, in spite of these measures, the condition persists in its return with each act of defecation, methods of radical cure are to be considered. Bryant[1] recommends physiologic rest, by making an artificial anus in the left groin, and placing the patient in the recumbent position for two weeks, the artificial anus being afterward closed. It does not seem to me necessary to subject the patient to the dangers of two operative procedures involving the peritoneal cavity, to say nothing of the miseries incident to incontinence of feces in an abnormal direction, when simpler and equally efficient measures are available.

In children the method of linear cauterization introduced by Van Bruen gives the best results. After thoroughly emptying the bowels, an anesthetic is administered. The mucous membrane is lightly touched in narrow longitudinal strips with the cauterizing iron, after which the mass is reduced. The bowels are kept confined two or three days with opium in small doses, and the first movement preceded by a liberal enema of sweet oil. Allingham cleanses the protruding mucous membrane and applies nitric acid. The patient is kept in the recumbent position for from four to six weeks, and no bowel movements are permitted to take place in other than this position.

While the two last-named procedures are frequently successful in children, and even in adults in simple cases, it frequently becomes necessary to resort to less conservative measures in order to obtain a permanent cure. Among those introduced in recent years are to be mentioned temporary narrowing of the anal aperture by means of a purse-string or tobacco-pouch suture; narrowing of the lower portion of the rectum by infolding of its posterior wall; narrowing by means of excision of one or more elliptical portions of the mucous membrane alone, or this combined with narrowing of the anal orifice; by combined narrowing and shortening of the prolapsed portion by the application of Gersung's operation for fecal incontinence following excision of the rectum for carcinoma; elevation and fixation of the prolapse either extra- or intra-peritoneally; and, finally, amputation of the protrusion.

Temporary narrowing of the anal aperture by means of a purse-string suture was applied by Platt,[1] as follows: "At the junction of the skin and mucous membrane, just beneath the latter, a curved needle is inserted in the median line below, and a silk thread carried half way around the anus and out again, in the median line above, re-inserted in the same opening and brought out at the first puncture, making a purse-string suture. The little finger is then put in the anus and the purse-string tied around it. Apparently this would cause a suppuration and possibly a fistula. It does nothing of the kind, nor does it cause any pain afterward. The child has its stools in the recumbent position. If the feces are at all hard, injections are given to soften them. After three weeks the suture is withdrawn and the place kept clean, when it heals immediately with no return of the prolapse. By this method the bowel is kept in place long enough to contract adhesions." The operator further remarks that "two weeks after the removal of the suture in these cases one could not tell that sutures had been passed." It is probable that this procedure will prove of value as supplementary to Van Buren's and Allingham's method, and the combination bids fair to supplant more formidable measures in properly selected cases.

Infolding of the posterior wall of the rectum was proposed and successfully carried out by Lange of New York as follows: The patient was anesthetized and secured to the table in the knee-chest position, with the head turned to one side to permit of the anesthetic being continued. An incision was made as for the removal of the coccyx, and the latter removed. Through the space thus gained the rectal wall was infolded in a longitudinal direction, and there held by two rows of buried "*etage*" sutures of catgut. The first row was applied near the median line, and was so placed as to form a fold in the posterior wall of the bowel which projected into its interior. The second row brought the lateral portions of the bowel wall over the first, thus increasing the depth of the fold. The divided edges of the levator ani and external sphincter were finally united. The wound of the skin was partially sutured and the cavity corresponding to the excised coccyx loosely packed with iodoform gauze.

Excision of portions of the rectal mucous membrane has succeeded in certain mild cases. The excised portions are lozenge-shaped, and so arranged that the resulting eschars are longitudinally placed. Two or more of such elliptical excisions may be applied, according to the size of the prolapse. In more advanced cases it will be necessary to narrow the external orifice in addition, either by the application of the purse-string suture or of Roberts' operation. The last named surgeon makes a diamond-shaped excision, one-half of the space included in the excision being upon the mucous membrane of the posterior wall of the rectum and the anal opening, and the other upon the skin between the latter and the coccyx. The anus is dilated preliminarily. These incisions are deepened and the included tissues removed, the removal including in that portion of the diamond upon the rectal wall the entire thickness of the latter, and in that upon the skin the integument and subcutaneous connective tissue. At the point where the bases of the two triangles which form the diamond-shaped space meet about one inch of the sphincter ani is removed. The whole is excised in one piece. The upper limit of the space left is situated about three inches up the bowel, and the lower posterior limit of that located externally at the point of the coccyx. The space left is closed by silk sutures except at the point of the coccyx, where a drainage tube is introduced. The ends of the anal sphincter are still further secured by a deeply placed and shotted silver wire suture.

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[1] *Mathew's Medical Quarterly*, vol. 1, No. 4.

[1] *Johns Hopkins Hospital Bulletin*, July, 1896.

Gersung's method of torsion of the stump of bowel left after excision of the rectum for carcinoma in order to obtain a sphincter action at the rectal outlet may be applied for the cure of prolapse of the rectum. The lower segment of the bowel, together with the sphincters, is loosened from all connections, the mass reduced and torsion practised. A half turn of the bowel upon its long axis may produce sufficient narrowing and shortening to effect the purpose, or an entire turn, or even more, may be necessary. The skin wound is closed, this being sufficient to retain the twist, and a small drain introduced posteriorly.

In the operations by elevation and fixation the object is to suspend and secure the prolapsed portion in position. Verneuil aims to accomplish this by the extra-peritoneal route. Maylard,[1] in his excellent treatise, gives the preliminary incisions of this operation as follows: "A calculation is first made regarding the dilated anus as to the extent of the boundary necessary to produce a normal-sized aperture. From points equidistant from the median line, and where it is believed the remaining anterior part of the anal circumference contains a sufficient margin when united to form a normal orifice, incisions are carried horizontally outward for 3 cm." The further steps of the operation are as follows: "From the points where these incisions terminate two other incisions pass to meet each other at the point of the coccyx. The flap thus formed is loosened from behind forward, and left temporarily attached to the tissues surrounding the anus. Access is thus gained to the space between the rectum and coccyx. The posterior wall of the rectum is loosened for a breadth of from 5 to 6 cm., and to a height corresponding to the distance from the anus to the coccyx. Four threads are now passed transversely through the posterior wall of the rectum, parallel with each other, and not including the mucous membrane. By means of a needle with an eye at the point, which is passed through the skin from without, the threads are drawn through and secured upon the skin surface in pairs upon either side of the median line. Strong traction is made upon the sutures in order to secure the rectum in its new position. Rolls of iodoform gauze are placed upon the skin beneath the loops in order to prevent these from being buried. The upper suture should be on a level with the articulation between the first bone of the sacrum and the coccyx, and the lower at the point of the coccyx. The intervening sutures are placed about equidistant between them. The triangular-shaped flap is now removed, the muco-cutaneous anal margin being preserved, a drainage tube introduced, and the wound closed by sutures.[1] In another account of the operation [2] translated by Maylard, it is stated that the flap is not removed, but replaced and sutured.

In a case successfully operated upon by myself, I modified this operation by making the incision semicircular in shape and half way between the anal margin and the point of the coccyx. The dissection is carried well up between the rectum and sacrum. With two fingers in the rectum, the posterior wall of the latter is forced through the external wound, and four sutures of heavy chromicized catgut passed transversely through the posterior rectal wall, including all its tissues, to the mucous membrane. A short incision is then made down to the bone at the junction of the sacrum and coccyx, and the sutures brought out upon corresponding sides of the latter and tied across the bone, strong traction being made to bring the rectum in position. This skin wound is now closed. The incision between the point of the coccyx and the anus is now closed, except at the central portion, in which an iodoform gauze drain is inserted. A further improvement would be to pass the sutures through the posterior wall of the rectum, so as to produce an infolding effect, as in Lange's operation, by drawing the lateral portions of the rectal wall to the median line and there securing them by tieing. The long ends of the same sutures may now be used for suspending and fixing the rectum.

McLeod secured fixation of the bowel above Poupart's ligament by pushing up the gut from below by means of the left hand in the rectum, and there securing it by two long acupressure needles passed three inches apart through the abdominal wall and the gut, guided by the fingers in the bowel, and then out again upon the abdominal wall. He then made an incision between the needles and down upon the peritoneum. Guided by the fingers again passed into the rectum for that purpose, he attached the serous and muscular coats to the abdominal wall by silk sutures. The wound in the abdominal wall was then closed by silk sutures, which also included the two outer walls of the intestine. The steel pins were removed in twenty-four hours.

Berg of Stockholm,[3] in a paper before the Swedish

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[1] "The Surgery of the Alimentary Canal," 1896.

[1] *Bull. et Mem. de la Soc. de Chirg. de Paris*, T. xv, page 754.

[2] *Gazette Hebdom. de Med. et de Chirg.*, 1889, vol. xxvi, page 812.

[3] "Annals of Surgery," vol. xvii, p. 373.

Medical Society, reported three cases upon which he had operated by abdominal incision, as in iliac colostomy. After opening the abdomen, the prolapse was reduced by drawing up the sigmoid flexure and upper portion of the rectum, in which position the gut was secured by silk sutures passed through the entire thickness of the meso-rectum and parietal peritoneum.

Finally, extreme cases of procidentia recti will occasionally come under the surgeon's observation in which nothing short of a removal of the parts will avail to rid the patient of an otherwise never-ending source of misery. In pre-aseptic days amputation of the protruding mass almost invariably terminated fatally from peritonitis. At the present time, however, these operations are not only justifiable, but are imperatively demanded, when other and less extensive measures fail to afford relief.

Operations designed for the removal or amputation of the protruded mass of intestine may be performed aseptically, and a strict regard for this part of the operative technic should always be observed. All operative procedures in this region should be preceded by a few days purgation with salines, during which time the patient should be fed with sterilized liquid food. In the operative procedures about to be described, both the cavity of the bowel and the peritoneum are invaded by the surgeon's knife, and increased caution is necessary in the manipulation, lest the peritoneal cavity be soiled by infectious material. The protruding portion of gut should be well washed with soap and warm water before making the incisions, the parts being well protruded by the patient for that purpose before anesthetization, and during the operation the parts are to be constantly irrigated with a weak solution of carbolic acid or the borosalicylic solution of Thiersch. The best position for operating is the lithotomy position, and in order to secure gravitation of the abdominal contents away from the seat of operation, the pelvis should be well elevated. All bleeding points are to be secured before returning the sutured parts and an opium and iodoform suppository introduced. The bowels are to be kept confined for from five to eight days, in order to secure firm union, and, that there may be no risk of tearing the latter apart, the first bowel movements are to be made as easy as possible by a copious preliminary injection of sterilized sweet oil. The cavity of the rectum may be likewise advantageously washed out during the first few days by means of copious enemata of sterilized water following each movement of the bowels.

In Mikulicz's operation[1] the intestine is fixed by two strong sutures passed through the most dependent part of the protrusion; these are given in charge of an assistant. A transverse incision is made in the anterior face of the portion of gut which presents itself to the surgeon, or that portion which lies externally. This incision is made from 1 to 2 cm. in front of the supposed site of the anal opening. Bleeding vessels are secured singly and ligated with catgut. When the external portion of the intestinal tube is completely cut through the peritoneal pouch between the two portions of the gut is opened and the peritoneal covering of the internal intestinal tube exposed. The communication with the peritoneal cavity is shut off by suturing the peritoneal surfaces together as fast as the transverse incision is extended, the surgeon extending the latter and placing catgut sutures in position as he proceeds, until the entire circumference and thickening of the external portion of the intestinal tube is divided. This being accomplished, the internal intestinal tube is divided just in front of the row of sutures already applied, and the two extremities of the gut united by a second row of sutures which includes all the coats of the intestine. Mikulicz employs silk for this second row of sutures and leaves them long to steady the bowel during the subsequent steps of the operation. Chromicized catgut may be employed with advantage, and the difficulties of finally removing the sutures avoided. In order to prevent the line of union from slipping away from the operator during this portion of the manipulation, the stumps may be grapsed with several pairs of fixation forceps. Finally, the line of sutures is to be dusted with iodoform and the remainder of the gut is replaced.

Kleberg[1] encircles the part just above the line of proposed suturing with an elastic ligature drawn sufficiently tight to control the circulation, makes a 2-inch longitudinal incision which opens in the sac formed by drawing down the peritoneum and thus assures himself that the sac is empty. A trocar is then plunged from before backward through the sac, and through this two elastic ligatures are passed through the protrusion and the two halves of the latter tied off. The temporary ligature is then removed, after which the prolapsed portion is amputated below the suture line.

Treves[2] operated in a case of simple prolapse as follows: The first circular cut was made through the mucous membrane only. He then dissected the latter off and turned it down like a cuff until the external sphincter was exposed, at which point the remainder of the protrusion consisted of mucous membrane only.

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[1] *Verheindlungen der Deutscher Gesellschaft für Chirurgie*, Bd. 17.

[1] Kelsey, *Annual of the Universal Medical Sciences*, 1891, vol. iii, Section D, p. 22.

[2] *Die Krankheiten des Mastdarms und des Afters*, *Deutsche Chirurgie.*

The latter was then divided at the level of the anus and the stump of mucous membrane was sutured to the skin margin. The peritoneal cavity was not opened. In a case of procidentia he was compelled to open into a peritoneal pouch which had been dragged down. This was immediately closed with chromicized gut, and the divided end of the bowel sutured to the anal margin by sutures which involved the whole thickness of the wall of the gut and as much as possible of the subcutaneous tissue about the anus.

Esmarch[4] proposes the following operation in severe cases: A wooden bougie with a circular groove is introduced until the groove has almost reached the anus. The prolapsed portion is then made bloodless by an Esmarch bandage, and constriction is made by passing an elastic band around the tube. Provision against hemorrhage being thus provided for, the parts are amputated almost an inch in front of the elastic band. All visible vessels are ligated and the peritoneum carefully closed by catgut. The constricting band is now removed and bleeding points secured, after which the remaining coats are sutured and the tube removed and supplanted by a rectal tube.

GAUZE DRAINAGE IN SURGICAL GYNECOLOGY.

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Gauze has so generally superseded the other means for draining cavities and wounds of various kinds, that it is not the purpose of this paper to institute any comparison between this and other forms of drainage, but to discuss some of the methods of its use which have been found to be of service in the hands of various operators.

When extensive surfaces are left to ooze, and especially within cavities where complete apposition cannot be secured, gauze acts like multiple capillary tubes to remove the serum that would otherwise separate the tissues while the oozing is at its most active stage. Iodoform gauze has come to be pretty generally used for this purpose, though it is doubtful if the iodoform in all instances is necessary. This gauze is, however, a styptic, and acts more favorably in preventing capillary bleeding than does plain gauze. Where quantities of gauze have to be used, as in packing the pelvic cavity when extensive denudation of surfaces has occurred, there is more danger of iodoform poisoning from the direct absorption of the drug than is commonly supposed. Such absorption has occurred many times to such an extent as to produce alarming and even fatal symptoms, and I am convinced that in many other cases a less degree of the poisoning occurs which proceeds no further, perhaps, than to cause headache, restlessness, and rise of temperature.

Iodoform is not an antiseptic, and does not make an infected wound clean, but the gauze mechanically retains pus for a short time within its meshes, and the iodoform seems to retard the septic process by rendering the pus temporarily inactive until nature can throw about it a wall which shuts the cavity off from adjacent tissues. When iodoform gauze is used for packing a uterus that has been curetted, unless the wound has been made aseptic, or nearly so, previous to the packing, there will be a prompt rise of temperature and all the evidences of infection if the gauze is not speedily removed. · To rely, therefore, upon iodoform gauze to make an incomplete operation a success is a fallacy, and has brought the method of tamponing the uterus after curetting into disrepute in certain quarters. Anyone can see how a purulent salpingitis can be made more dangerous than it originally was by tightly packing the uterus with gauze. In this case the incorporation of iodoform in the gauze will not help matters, and ought not to be expected to. So safe and so conservative a thing as gauze tamponing may be, and often is, so thoroughly misapplied in these cases as to bring the soundness of the theory into question. No one can doubt, I think, that careful tamponing with gauze after curettement for chronic metritis aids very much in bringing about the involution of the organ, which is one of the chief things to be sought for. The cavity must never be tightly packed, however, unless it is aseptic, and likely to remain so, because there is no drainage of pus into it, and this whole question, therefore, hinges upon the diagnosis, which ought to be carefully made in all instances.

As to the length of time that gauze should be allowed to remain in the uterus there is a great difference of opinion. My own rule is to leave it five days, unless there is a rise of temperature and severe pain. If the gauze has remained within the cavity for that length of time it seems to me that all the good has been accomplished that can reasonably be expected, and I do not replace it. I prefer, if involution does not then occur, to rely upon douching, iodin and glycerin tampons, and galvanism. It seems to me better to wait two months even, and then to dilate and curette, if necessary, and to thoroughly apply the tampons under ether, than to do this immediately after the first removal. The objection to gauze tamponing within the uterus which has lately been urged—that it acts as a wedge in the cervical canal as soon as the uterus contracts, and thus acts as a plug to prevent drainage—I think is an error, for it is difficult to suppose that only the longitudinal fibers of the uterus thus contract and serve to force the gauze firmly downward. The truth is that gauze should never be so firmly packed that such obstruction can take place. Practically, such a difficulty has never occurred to me, perhaps from the fact that in all cases where moderately firm packing has been used, a little of the tape, say six inches or a foot, is drawn downward daily after the first forty-eight hours, and free drainage of the uterus thus secured.

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[4] Liefering, *Deutsche Chirurgie* 48. Review by Kammerer, "Annals of Surgery," vol. vii, page 151.

The next objection urged—that the gauze tampon does not secure drainage, and is, therefore, a danger in cases of catarrhal salpingitis—has more force; but in these cases, too, accidents occur by reason of the firm and consequently improper use of the packing, especially over the mouth of the Fallopian tubes. All this is easily avoided by a little skill, and the gauze drain, when loosely applied, seems to more effectually bring about subinvolution of the uterus than can be secured without any drainage. In these cases it is of still more importance to pull down the tape little by little, until one-half of the whole amount has been removed, previous to its complete removal.

The third objection—that curettage is always followed by a higher average temperature when gauze is used as a part of the operation—is not borne out by the facts as I have observed them. When the scraping has necessarily been vigorous, and a large amount of adenoid tissue has been removed, there is often a rise of temperature of one degree, which is of but short duration, and which, I think, is due to the mechanical violence, rather than to the presence of the gauze; and this, in my opinion, is proved by the fact that the temperature soon subsides, and, after the first day, is not above normal.

Introduction of gauze into the uterus during the active stage of gonorrheal inflammation is wrong, and, in addition to the danger of increasing the salpingitis, can accomplish no practical good. The distension and packing of the vagina in these cases is certainly very beneficial, for while smoothing out the rugous membrane, it keeps the parts dry, and thus prevents rapid prolification of germs. My practice has been, in these instances, as well as in others where there is a profuse vaginal discharge, to introduce sterilized gauze, upon which I pour, as it is passed into the vagina, an abundance of powdered boric acid. These tampons are left in place for thirty-six, or even forty-eight hours, and are effectual not only in stopping the catarrhal exudate, but also in preventing that troublesome pruritus which accompanies so many of these conditions.

In plastic operations upon the vagina, dry gauze, preferably bichloridized, is useful in not only rendering aseptic such secretions as cannot be avoided from above, but also in keeping dry the parts, so that the wound may be sealed up as speedily as possible. Since I have adopted the rule of curetting and tamponing in every case before a trachelorrhaphy is performed, I have found the results to be much better than when this operation was done without it. Involution is much more generally secured, and the wound becomes firm in a shorter time. Of course, dry gauze is loosely packed in the vagina and closely around the cervix. In cases of septic metritis following abortion, or retained placenta after childbirth, I have also been accustomed to drain, but never to pack the uterus firmly and never to allow the drain to remain in more than forty-eight hours. If the purulent discharge is very abundant, the drain is not put in at all during the first few days, during which time warm antiseptic irrigation is used. When the temperature has fallen, and the irrigation is no longer necessary, the gauze may be introduced and removed daily.

Of late I have been experimenting with other kinds of gauze, especially in the treatment of those hopeless cases of inoperable cancer, which require rigid antisepsis in order to make the life of the patient tolerable. After curetting such a dirty cavity, irrigating, and applying chloride of zinc, I have packed these wounds with gauze saturated in acetanilid solution, and have found that the pain is much less, as well as the fetor, and that the gauze can remain in fully as long as we are accustomed to leave iodoform gauze. The acetanilid acts well also as a styptic, and I am using it more and more in sensitive sinuses of all sorts. The combination of odors made by these discharges with iodoform is something particularly sickening, and I think that for this reason alone acetanilid gauze should be used exclusively in these cases. Within the past month I have learned of one dispensary case in which the uterus was tamponed with acetanilid gauze for hemorrhage and the patient sent home, the operation being followed by syncope, profuse sweating, and prolonged vertigo, which seemed to be due to absorption of the drug. In cases of cancer, however, or of sloughing wounds generally, this absorption need not be feared.

In all cases of vaginal celiotomy gauze drainage seems to be necessary. It acts not only as a drain, but the gauze keeps the wound open, which would otherwise speedily close, and it also prevents the occurrence of hernia. But aside from the common uses of the drain in these cases, when the peritoneum is actually opened and pus is found, there are instances in which the introduction of the gauze into the phlegmonous mass sets up a drainage which soon causes the disappearance of the exudate. This use of iodoform gauze is one of the most direct illustrations of the benefits of capillary drainage. Such gauze may be left in place for five or six days, and then careful irrigation should be used, after which it should be reinserted. In abdominal operations, when pus has escaped into the pelvis during the removal of diseased tissue, I have for two years employed gauze drainage without irrigation. If the intestines have been carefully protected by sponges, so that the pus has not been freely admitted among them, I have wiped the cavity dry and tamponed with iodoform gauze (two per cent.), then have removed the sponges, and without more disturbance of the viscera than was necessary, have allowed the probably infected tissues to rest against the column of gauze which is brought up out of the abdominal wound. The wound is then closed to within an inch or an inch and one-half of its length. If the gauze has been folded backward and forward when it is first applied, its removal is comparatively easy, and the danger of hernia slight; indeed, I have had no case of hernia from this cause. After the second day the removal of the packing is begun, and strip after strip is removed every day. When the final enclosing tube of gauze is brought up out of the wound there will be found among its meshes detritus to the amount of half an ounce, in many instances chiefly composed of pus corpuscles. What applies to pelvic surgery applies with even greater force to the operation for appendicitis.

Unless the cavity is found to be walled off from the general cavity of the abdomen, irrigation should not be used, for septic material may be carried among the intestines, and beyond the possibility of drainage. Such detritus, if kept within a small field, may be partially removed by wiping with gauze, and the remainder can then be allowed to drain into the meshes of the gauze by the current of fluids caught up by capillary action.

Gauze that is used for external dressing on aseptic surfaces need not be medicated; indeed, the exclusion of air and the prevention of the accumulation of moisture about the wound is all that is necessary. It need hardly be said that all gauze should be most carefully prepared and sterilized, and that for all practical purposes iodoform gauze and bichlorid of mercury gauze should not have such a large percentage of the respective drugs rubbed into the fabric as is usually done by manufacturers.

Antitoxin for Lockjaw.—The cure of a case of lockjaw, after fifteen days' treatment with the tetanus antitoxin prepared by the New York Board of Health, is reported at Bellevue Hospital. It is the first cure of tetanus by this treatment at Bellevue, and the second in the city, the first was effected at the Presbyterian Hospital June, 1896.

THE RELATION OF MASTURBATION TO INSANITY, WITH REPORT OF CASES.

By RALPH A. GOODNER, M.D.,
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PHYSICIAN TO THE ILLINOIS SOUTHERN HOSPITAL FOR THE INSANE.

That masturbation is both a cause and result of mental disease cannot be gainsaid. There are many more resultant than causative cases, as many insane patients are addicted to the practice after becoming insane who were not so previously. The act is practised among the patients confined in our insane hospitals to a greater extent than we are aware of, in spite of all effort to prevent it on the part of officials and attendants. When we consider that these patients have no opportunity for the normal gratification of the sexual desire, and that in many this desire is abnormally developed, as in the satyriasis of mania and early stage of paresis, it is not to be wondered at.

The deleterious influence resulting from masturbation acts both physically and mentally, but the latter effect is, in my opinion, decidedly the more pronounced of the two. A cause, to be psychical, does not necessarily have to produce an immediate effect, but usually we find such a cause acting through a series of attacks upon the brain and nervous system until mental impairment or disease follows. Some authorities on genito-urinary diseases take the view that the harmful results of masturbation are evident only in those who practice it excessively, and claim that the act in itself is no more harmful than the normal sexual act. While I believe that they who masturbate do so excessively in many instances, I believe also that the results are more baneful, not because of the excesses indulged in, but because the practice produces a direct deleterious effect on the brain and nervous system that the normal sexual act does not produce.

Masturbation can be, and often is, the sole exciting cause of insanity. The four cases I report herewith are only about one-fifth of the total number of insane male patients admitted to the Illinois Southern Hospital for the Insane during the past four years whose histories previous and subsequent to admission showed this habit to be the sole exciting cause of their insanity.

In classifying mental diseases, authorities of today do not recognize any special form as being due to masturbation, although the older writers did, and termed such "masturbatic insanity." While those psychoses due to or accompanied by this vice seem to have certain characteristics in common, I do not think we are justified in classifying them separately. From the description of masturbatic insanity given us by the older writers, I think I recognize the stuporous insanity of the present, and in my experience a great majority of the cases of mental disease resulting from masturbation exhibit this form of the disease, although it is also produced by altogether different causes.

The prognosis of insanity due to masturbation is usually very favorable. The first and most important step in treating such a case is to remove the cause. Any condition that tends by reflex action to direct the patient's attention to his genital organs, such as a disordered condition of the bladder or rectum, and non-hygienic local conditions, must be corrected. I do not know of any drug that possesses any special virtue when directed against this habit, but nervines and tonics are often beneficial, and one should meet any special symptoms as they arise. A proper and nutritious diet should be prescribed, and the bowels kept in a soluble and regularly acting condition. An intestinal disinfectant often seems to be beneficial.

CASE I.—R. B., male, single, aged nineteen; weight, 124 pounds; height, 5 feet 7 inches. Admitted September, 1894; first admission. Occupation, laborer. Duration of insanity not stated. No history of heredity. No bad habits other than masturbation. Physical condition poor. Refused food. Diagnosis, stuporous insanity. Marked and rapid improvement followed treatment, but several remissions occurred before recovery, being due in each instance to a withdrawal of the mechanical means employed to prevent masturbation. Discharged as cured in January, 1895. No recurrence to date.

CASE II.—E. J., male, single, aged nineteen; height, 5 feet 7 inches; weight, 143 pounds. Admitted April, 1893; first admission. Occupation, laborer. Duration of insanity, two months. No history of heredity. No bad habits except masturbation. Physical health good. Diagnosis, stuporous insanity. Patient recovered, and was discharged in October, 1893. No recurrence.

CASE III.—B. M., male, single, aged twenty-five years. Occupation, laborer. Admitted November, 1893; first admission. Physical health good. No heredity, and no bad habits except masturbation. Duration of habit not stated. Diagnosis, stuporous insanity. Patient discharged, cured, in April, 1895. No history of recurrence to date.

CASE IV.—C. W., male, single, aged twenty-two years. Occupation, farmer. Duration of insanity, two months. Admitted November, 1893; first admission. Physical condition good. No heredity or history of any bad habits other than masturbation. Diagnosis, acute melancholia. Discharged cured, in June, 1894. No recurrence.

Three of the four cases presented the same form of insanity, and this form has been present, when the ascertained cause has been masturbation, in about the same proportion in all the cases admitted during the past few years. In these cases not one presented a history of heredity, the great predisposing cause of insanity, or of any other predisposition to the insane state. The remissions in Case I., following so quickly and regularly after the withdrawal of the means to prevent masturbation, the patient at the time being in good physical health, with the absence of a history of heredity, tends to show that masturbation can be the sole exciting cause of mental disease.

CLINICAL MEMORANDUM.

A CASE OF MULTIPLE COSTAL RESECTION.[1]

BY A. STEWART LOBINGIER, M.D.,
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ON October 26, 1894, Mr. Wm. F., aged thirty-two, consulted me, upon the advice of Dr. W. B. Craig, for relief from an intrathoracic abscess. The pus from the empyema was discharging anteriorly through an oblique fistula. He had enjoyed good health up to 1892. Two and a half years previous to the time I saw him, he had had an attack of lobar pneumonia involving the left lung, which was accompanied by a severe pleurisy. The sero-fibrinous effusion which resulted had been so rigorously treated with erosive counter-irritants that the condition culminated in septic infection through the subcutaneous lymph channels. There had been no meddlesome interference with the exploring needle, cutaneous inoculation being the probable source of the infection. Thirteen months had been spent in treatment in Denver at the hands of several different physicians, and a diagnosis of phthisis pulmonalis had been made. He continued to grow worse in every way. His symptoms finally became so accentuated that death seemed imminent, and he determined to change from the climate and altitude of Denver to that of San Antonio, Texas. Upon reaching San Antonio, he consulted Dr. Van Koehring, who correctly diagnosed his case and gave him great relief by an intercostal incision, through which about two liters of pus escaped. No shock followed this operation, but he was given to understand that it ought to be followed by a resection of the ribs, and this, it was advised, should not be long delayed. The progress of the case from that date until several months later was so favorable that the patient deferred the radical operation. He gained so rapidly in appetite, weight, and strength that he and his friends considered further operative measures would be unnecessary. During the time subsequent to the pleurotomy the discharging sinus was dressed once a day by the patient himself with warm water and a covering of non-absorbent cotton.

In April, 1894, he returned to Denver, but as the abscess cavity became more profoundly infected, the symptoms of sepsis and failing vitality returned; so that at the time I saw him, six months later, his weight had fallen to 119 pounds, and he had a temperature of 101½° F. Cough was pronounced, and there was entire loss of appetite.

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[1] Abstract of a paper read before the Denver and Arapahoe Medical Society.

On examination the right lung was found to be normal throughout. The left lung was densely consolidated at the base, posteriorly. There were moist râles in the upper area of the lower lobe, and infiltration and râles in the upper lobe. The heart was somewhat displaced to the right with the apex well into the subensiform depression. There was probably a quart of pus continually present in the abscess cavity, which discharged as best it might through an oblique fistula 1 inch internal to and 3 inches below the left nipple. A superficial exploration of the fistula was made to determine its direction. All further meddling was avoided. The patient was advised to undergo a multiple resection of the ribs as a radical remedy. He entered St. Joseph's Hospital, where, on November 1st, assisted by Drs. E. R. Axtell and J. B. Devlin, I performed a multiple resection, somewhat after the technic of Estlander. The patient had been prepared by tonic stimulants for several days, and eighteen hours' rest was given before the operation, during which strychnin and digitalis were exhibited in liberal doses.

After the usual disinfection and toilet on the table, a curved probe was passed to the lowest point in the cavity falling in the axillary line. By ventral pressure the impinging point of the probe became prominent through the thoracic wall, indicating the point of greatest dependency. At this point the intercostal incision and preliminary resection were made in order to permit of evacuation and washing out of the cavity previous to the general resection. After the resection of an inch and a half of the eighth rib, and enlarging of the seventh intercostal space for a similar extent, an attempt was made to wash out the cavity, but the cavity was so large, having a capacity of fully a liter and a half, and the walls were so resisting, that it was quite apparent that more than the legitimate time for the entire operation would be consumed in its antiseptic irrigation, and the opening was therefore plugged with antiseptic gauze and the general resection proceeded with. From a point 1 cm. above the fourth rib, opposite to the third intercostal space and 2 cm. posterior to the pectoral fold, I described the anterior line of an ellipse downward to the anterior edge of the primary exsection, carrying the knife through the skin, subcutaneous tissue and muscle. In a similar manner the posterior arc of the ellipse was described backward and downward, care being taken to lengthen the transverse axis in the descent so that the ellipse should present a somewhat pyramidal figure with its base downward, the incision ending at the dorsal angle of the opening into the thorax.

As rapidly as possible the elliptical flap and the portions of the latissimus dorsi and serratus muscles invaded were dissected up and the ribs exposed. The costal periosteum was incised laterally and the entire ventral portion stripped away, leaving the segment of the rib exposed and clean for immediate excision with the saw. All posssible speed consistent with careful work was exercised at this stage of the operation and segments of five ribs, of 1¾ to 4¾ inches in length, and embracing the fourth, fifth, sixth, seventh, and eighth, were excised. An additional segment of the eighth rib was removed, extending 1½ inches posterior to the primary exploratory exsection. The posterior half of the periosteal cortex of each rib was left intact, which, though an original modification of Estlander's method, was thought best in this case. In order to prevent possible infection, the upper portion of the wound was dried with sterilized sponges, and the edges down as far as the sixth intercostal space were brought together with retaining sutures of heavy silk. The edges of the severed latissimus dorsi and serratus muscles were included in these sutures. The exposed and unsutured area, from the seventh rib to the eighth interspace, was left exposed to heal by granulation. This surface, together with the line of sutures, was bathed with a 1–1000 bichlorid of mercury solution, and, as a further precaution against the possibility of the absorption of any septic material from the contents of the thorax, the area and line of sutures were packed with gauze moistened in the same solution, and the entire field protected as thoroughly as possible. The abscess cavity was now irrigated with a 1–1000 bichlorid solution. Two quarts of this solution were introduced, followed by the same quantity of a 1–2000 solution, and 4 quarts of salt solution. The temperature of the solutions was slightly above body heat.

The cavity, which had collapsed greatly after the excision and the application of the sutures, was yet sufficiently patent to allow of thorough irrigation of every portion. On exploring with a sound it was found that a dorsal counter incision to facilitate drainage was not indicated, and that the plane of drainage was upward and backward at an angle of 20 degrees. The cavity was packed with iodoform gauze, the wound sprinkled with iodoform, and the usual antiseptic external dressing applied. In the application of the roller, as tight constriction as was tolerable to the patient was employed at this and each subsequent dressing. At the third dressing it appeared from the small amount of packing which the cavity would receive, that coaptation of the walls had been general and symmetrical. This relation changed somewhat during the following three weeks, but the cavity steadily closed, although during the course of the irrigation and packing both pyrozone and balsam of Peru were used to hasten the formation of granulations.

The patient made a rapid and uninterrupted recovery, gained forty pounds in weight, and became muscular, ruddy, and able to do hard manual labor all day long. So jubilant was he over his return to health that he became reckless and intemperate, and after an exposure, seven months after he was discharged from my care, he was taken down with a lobular pneumonia, which was followed by a small effusion. On seeing him I learned that he had been hard at work for six months after I had last seen him, and had enjoyed the most robust health. His careless mode of life, however, had eventually reduced his resistance, and this variety of relapse resulted. The effusion, which was largely serous, was evacuated, the cavity carefully washed antiseptically, and the puncture sealed. The effusion did not return, and the patient, since this event, has been strong and hale. It is now over two years since he was operated upon, and a year since the occurrence of the second pneumonia with effusion, and he has remained perfectly well, with not a trace of disturbance of the operative area.

The heart, which had been so markedly displaced to the right, has swung back almost to its normal position. The upper lobe of the left lung and the upper fifth of the lower lobe are apparently patent and but slightly impaired, but the lower portion of the lower lobe is entirely gone. The depression from loss of tissue has been corrected to a great degree by the gradual regeneration of the thoracic wall. The curvature of the spine and consequent depression of the shoulder have been thereby corrected, and he stands as erect as one with an unimpaired thorax.

MEDICAL PROGRESS.

The Influence Exerted upon the Infant by the Physical and Mental State of the Wet-nurse.—BUDIN (*L'Obstétrique*, 1896, No. 4, p. 321) reports seven instances that illustrate the influence exerted by the state of the wet-nurse upon the infant at the breast. Three children nursed by a woman suffering from pain lost in weight. Two other children nursed by an angry woman also lost in weight; in both the bowels became loose. The same result followed when the woman undertook to nurse her own infant. Two children nursed by a menstruating woman lost in weight and developed an erythema of the thighs.

The Absorption of Albumins by the Rectum.—KOHLENBERGER (*Münch. Med. Woch.*, November 24, 1896,) carried out a long series of experiments in order to determine the amount of albumin which the rectum is capable of absorbing. As a result of his investigations he draws the following practical conclusions: Albumins introduced into the large intestine may be completely absorbed, and, if so, tend to nourish the individual. In this important particular they differ from those albumins that are injected directly into the blood, for these circulate in the organism as foreign material, and are eliminated by the kidneys without being used.

The Nature of Acute Articular Rheumatism.—LEREDDE (*Archives générales de Médecine*, August, 1896, p. 149) expresses the opinion that acute articular rheumatism presents characters that range it among diseases of microbic origin. The exciting cause is yet unknown; it may be a saprophyte, and is without doubt ærobic. It is to be looked for in the marrow of bone, in the blood or in the walls of the joints. It may possibly be found also in and about the pharynx, as anginas often appear to furnish a portal of entry. The disease belongs among the infectious arthritides of the serous variety which, like the purulent arthritides, are essentially blood-infections.

Acute Microbic Nephritis Secondary to a Wound of the Hand.—A case reported by PEDENKO (*La Presse Médicale*, December 19, 1896,) is of interest as demonstrating the possibility of a bacterial nephritis having its origin in the blood. The patient, a man aged twenty years, had a felon of the right middle finger, which was not opened until the suppuration had extended to the bone. Some days previously he had a general edema with dyspnea and headache and great weakness. Three weeks after the infection the urine was found to contain a staphylococcus albus, which was also found in the wound mixed with staphylococcus aureus and bacilli. The urine also contained albumin, blood, and casts. With the improvement of the wound the bacteria disappeared from the urine.

Addison's Disease Followed by Recovery.—CERVELLINI (*La Presse Médicale*, December 19, 1896,) was called upon to treat a man aged twenty-two, in whom, for a year, there had been increasing general debility with epigastric pain. The skin, especially of the hands and face, was brown, the liver was increased in size, the heart's action was irregular and there was loss of appetite, diarrhea and extreme weakness. The left testicle was tuberculous and much enlarged. There was no personal or family history bearing upon the case. A diagnosis of Addison's disease was made, but before commencing general treatment the testicle was removed. Ten days later all of the symptoms had improved except the intense epigastric pain. The patient was then put upon a strict nitrogenous diet and iodid of potash for two months, at the end of which time he was completely cured. He was afterwards seen by the author, and none of the symptoms had recurred.

ice. In the first place,

are destroyed and, therefore, less than the normal amount of bile secreted and, secondly, the constriction of the interlobular bile ducts is shared by the lymphatics in their immediate neighborhood. In hepatic cirrhosis, in short, the diseased sections of the liver are in the same circulatory conditions as is the entire liver in Harley's experiment.

In hypertrophic cirrhosis, the liver cells are not destroyed; bile is secreted abundantly, and there is obstruction to its outflow, occasioned by the constriction of the smaller bile ducts, for in this variety the hyperplasia of the connective tissue begins and continues as a periangiocholitis.

Exceptional cases undoubtedly occur in which jaundice accompanies atrophic cirrhosis, and such jaundice may be either of intra- or extrahepatic origin. For the production of the intrahepatic variety, it is only necessary that the compression exercised by the contracting connective tissue should impinge more powerfully upon the bile ducts than upon the lymphatics.

The commonest cause of extrahepatic jaundice, and one to which spirit drinkers, the most numerous victims of cirrhosis of the liver, are especially predisposed, is gastroduodenal catarrh.

apparently have caused death so soon had it not been for his marked lymphatic condition. The practical point of this experience is that children with the status lymphaticus, in spite of their splendid appearance, often sink raply under light attacks of the disease. The prognosis in such cases ought, therefore, to be guarded, the more so as such children are often looked upon by their parents as being particularly healthy. In these cases long continued hydropathic measures, narcosis, and, in brief, every kind of weakening therapeutic treatment ought to be avoided as far as possible.

Remarkable Hypothermia in a Case of Subacute Hepatitis of Toxic Origin.—At a recent meeting of the Société Médicale des Hôpitaux, Clarede (*Semaine Médicale*, 1896, No. 35, p. 276) reported the case of a man, twenty-five years old, presenting a state of great weakness, with coldness of the skin, cyanosis, small pulse and a temperature of 33.8° C. (92.8° F.). Under active therapeutic measures the temperature rose in the course of eight hours to 35.9° C. (96.6° F.), the asthenia, however, persisting. A day later the temperature had risen to 37° C. (98.6° F.). On inquiry it was learned that the patient had been exposed to the vapors of mineral acids. On further inspection the skin was found to be slightly icteric, while the urine was diminished in amount and contained albumin, urobilin and an excess of nitrogenous matters. The stools were decolored and glairy, and the liver was

ing out of the cavity previous to the general resection. After the resection of an inch and a half of the eighth rib, and enlarging of the seventh intercostal space for a similar extent, an attempt was made to wash out the cavity, but the cavity was so large, having a capacity of fully a liter and a half, and the walls were so resisting, that it was quite apparent that more than the legitimate time for the entire operation would be consumed in its antiseptic irrigation, and the opening was therefore plugged with antiseptic gauze and the general resection proceeded with. From a point 1 cm. above the fourth rib, opposite to the third intercostal space and 2 cm. posterior to the pectoral fold, I described the anterior line of an ellipse downward to the anterior edge of the primary exsection, carrying the knife through the skin, subcutaneous tissue and muscle. In a similar manner the posterior arc of the ellipse was described backward and downward, care being taken to lengthen the transverse axis in the descent so that the ellipse should present a somewhat pyramidal figure with its base downward, the incision ending at the dorsal angle of the opening into the thorax.

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by cyanosis, with edema, accompanying paresis, paralysis or contracture of a part, and is attended by severe pain; acrocyanosis is free from edema, paresis, paralysis, or contracture and pain. Both Raynaud's disease and blue edema, as well as acrocyanosis, are of nervous origin, the last especially appearing to be an hysterical vasomotor phenomenon.

THERAPEUTIC NOTES.

Treatment of Copious Hematemesis.—Hirsch directs attention to profuse uncontrollable hemorrhage in ulcus ventriculi. As is well known, internal therapy, and rest and cold are useless in these cases. That instances of surgical interference are, as yet, few, is due to the fact that patients with gastric ulcer with profuse hematemesis are, as a rule, first placed in the medical wards and are seen by the surgeon only when it is too late. Hirsch, although recognizing the fact that the seat of the ulcer cannot always be located, yet favors operative interference even during a hemorrhage, following the maxim, "when blood squirts, ligate." Endoscopic examination of the walls of the stomach through the wound, just as in cystoscopy, he considers feasible in these cases. He concludes that operative interference is justified whenever (notwithstanding the most rigid rest and diet) there are repeated hemorrhages, which, by their frequency and profuseness, threaten the life of the patient. As an indispensable condition for operative interference, a certain diagnosis of hemorrhage *ex ulcere* must be established, eliminating hemorrhage due to cirrhosis of the liver, aneurism, atrophies, nutmeg liver and hemorrhages from the parenchyma of the stomach. The differential diagnosis between hemorrhage due to real ulcer and parenchymatous bleeding is not always easy to make.

Further Uses of Formaldehyd.—From Berlin (*Deutsch Med. Wochensch.* 1896, Nos. 39 and 40) comes the statement by Rosenberg that he has used formaldehyd in a new solution with gratifying results. The best known solution so far is a forty per cent. watery one known as formalin. Opperman used a sixty per cent. solution in methyl alcohol, which he called holzin. Rosenberg has experimented with the latter solution in combination with a small quantity of menthol to do away with its irritating properties. This fluid he calls holzinal, and when he allowed it to evaporate slowly from a small apparatus he obtained a perfect sterilization of the air and all objects in the room without injury. Even food was rendered absolutely free from germs by it. It had a favorable influence upon whooping-cough in all stages. When used in a solution as weak as 1–100,000 it prevents the development of bacteria, and a solution of a strength of 1–75,000 is germicidal. Formaldehyd was further given internally in a solution of milk sugar, (called sterisol). Examination of the urine shows that it is taken up by the blood, and is separated from it by the kidneys so slowly that its germicidal action in transit must be considerable.

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SPLENIC ENLARGEMENT AND JAUNDICE IN CIRRHOSIS OF THE LIVER.

TUMEFACTION of the spleen is commonly described in medical text-books as a necessary consequence of cirrhosis of the liver, and is invariably attributed to interference with the return of blood through the splenic vein. That this is a contributing cause to such tumefaction there can be no doubt, but that it is not the sole cause was pointed out by Senator in 1893 (*Berlin. klin. Wochenschr.*, No. 51, 1893). This well-known authority calls attention to the fact that, while the obstruction to the portal current is most marked in the radicles of the mesenteric veins, swelling of the spleen is an early manifestation of cirrhosis, and sometimes persists when all other signs of portal obstruction have subsided.

Again, swelling of the spleen is observed in cases of the hypertrophic cirrhosis of Hanot, in which signs of portal obstruction, more particularly ascites, are absent. In fact, enlargement of the spleen is relied upon by Senator as a differential point of diagnosis between hypertrophic cirrhosis and catarrhal jaundice. The early appearance of the splenic enlargement is especially important in this respect, because hypertrophic cirrhosis, in its beginning, is very apt to be confounded with catarrhal jaundice.

So far, then, from corroborating the commonly accepted doctrine that tumefaction of the spleen, coinciding with hepatic cirrhosis, is due solely to portal congestion, the facts speak rather in favor of some direct splenic irritant, such as alcohol, syphilis, malaria, or possibly microbic infection. In other words, the causes of the splenic swelling are probably, in part, the same as give rise to the various forms of hepatic cirrhosis.

The presence or absence of icterus in cases of cirrhosis of the liver depends both upon the activity of the hepatic cells and the condition of the bile ducts. Unless bile is formed it cannot be absorbed, but mere obstruction to the outflow of bile does not necessarily give rise to jaundice. In addition, it is indispensable that there be free communication between the lymphatics of the liver and the blood current. As was pointed out by Vaughan Harley, simultaneous ligature of the common bile duct and the thoracic duct is not followed by jaundice.

The conditions of Laennec's cirrhosis (atrophic cirrhosis) are unfavorable to the production of jaundice. In the first place, many of the hepatic cells are destroyed and, therefore, less than the normal amount of bile secreted and, secondly, the constriction of the interlobular bile ducts is shared by the lymphatics in their immediate neighborhood. In hepatic cirrhosis, in short, the diseased sections of the liver are in the same circulatory conditions as is the entire liver in Harley's experiment.

In hypertrophic cirrhosis, the liver cells are not destroyed; bile is secreted abundantly, and there is obstruction to its outflow, occasioned by the constriction of the smaller bile ducts, for in this variety the hyperplasia of the connective tissue begins and continues as a periangiocholitis.

Exceptional cases undoubtedly occur in which jaundice accompanies atrophic cirrhosis, and such jaundice may be either of intra- or extrahepatic origin. For the production of the intrahepatic variety, it is only necessary that the compression exercised by the contracting connective tissue should impinge more powerfully upon the bile ducts than upon the lymphatics.

The commonest cause of extrahepatic jaundice, and one to which spirit drinkers, the most numerous victims of cirrhosis of the liver, are especially predisposed, is gastroduodenal catarrh.

THE CORSET HABIT.

NOTHING is more extraordinary than the attitude of the profession at large upon the above-mentioned subject. Even the position of the corset wearer herself is less astonishing, for we have of course long ago ceased to be surprised at *anything* which lovely woman may choose to do or not do. She will or she will not—usually the latter—and we have learned to ejaculate a perplexed but submissive "Kismet," and accept the situation. Beyond the awful fact of her decision, the coarse intellect of man seeks in vain to penetrate. But from our fellow males we arrogate the right to demand those clumsy and labored excuses for one's attitude which we politely dignify by the name of "reasons." In this case they will be even harder to find than usual.

For over a century the leaders of our profession have been thundering against the corset and all its works. Every new investigation has added another to the long list of deformities produced by it. Absolutely nothing can be urged in its favor or even extenuation. It is established that the pressure of the corset seriously interferes with respiration and deforms the chest, displaces and distorts the liver, even to the extent of burying the lower ribs in grooves upon its surface, forces the stomach and intestines downward to press upon the uterus, thus producing versions and displacements, dislocates the kidney and plays general havoc with any and all of the viscera, thoracic, abdominal, and pelvic. That this instrument of torture is both capable and often guilty of all these offenses any intelligent physician knows both from unquestioned authority and by experience, and yet most of us are saying little and doing less to effectually discourage its use. We seem ready to ejaculate in weary despair what Tweed did in insolent defiance, "What are you going to do about it?"

We all know from experience the reason for this discouragement, the polite and pitying smile of half incredulity, half indifference with which our most earnest protests are met. "Oh, of course, its my corset! you doctors always blame that. I don't believe it for a minute—but anyway I couldn't live without it!" The unwritten laws of fashion may be as silk to the eye, but they are steel to the touch, and we are compelled ruefully to acknowledge that in an even deeper sense than that probably intended by the poet "there is no use disputing about matters of taste." Still we should remember that it was not until the seventh blast of the ram's horns after the tenth circuit of the city that the walls of Jericho fell down and nerve ourselves for another blast against the even higher (and much thicker) ramparts of Mrs. Grundy's prejudice and stupidity.

And this is the more incumbent upon us since every new development of late years so far from causing us to regard the corset habit in a more indulgent light, supplies fresh proof of its harmful nature and logically demands an even more unsparing denunciation and antagonism to it. Those who know most of it condemn it most severely. The gynecologists are almost a unit against it. In his late presidential address before the American Gynecological Society, Mann declares that the profession has not taken "sufficiently strong ground on this very important matter," and that "displacements, not only of the uterus but of all the abdominal viscera may result from only moderate waist constriction." This displacement not only is a source of injury in itself, as in floating kidney and in tension upon the solar plexus, but, by destroying the tone of the muscular coat of the stomach and intestines, favors food stasis with its resultant constipation and intestinal taxemia on the one hand, and on the other lithemia with all the Pandora's box of evils which follow in its train. In his opinion no small proportion of all the "diseases of women" are due to the lithemia and toxemia thus produced; and the frequency with which these displacements actually occur may be estimated by the fact that he has found the transverse colon below the umbilicus in more than fifty per cent. of his ovariotomy cases. Still more recently Kelly has again demanded the attention of the profession to the enormous amount of "ill-health, neurasthenia, and displacements of the kidneys and pelvic organs which come from the corset habit."

But these fresh arraignments are pressed home most vigorously from a somewhat unexpected quarter. For some years past those investigators who have devoted themselves specially to the diseases of the stomach have been coming to the conclusion that downwarn displacements of the viscera under the somewhat appalling titles of *gastroptosis* and *enteroptosis* are among the most common and potent causes of chronic digestive disturbances. For some time it was doubted whether this was a cause or an effect of the gastric and enteric disturbances of function, but further observations soon decided beyond question that in the great majority of cases not only was the gastroptosis the original cause, but that no adequate or lasting relief of the functional disturbances could be afforded until the "prolapse" was remedied or lessened. The question then arose whether the primary fault lay in elongation and weakening of the mesenteries, or in lack of adequate support to the intestines by the abdominal walls, and it was found that any influences which produced lack of tone in the recti and oblique muscles might give rise to this condition. This of course at once explained the hitherto puzzling fact that these ptoses were nearly six times as frequent in women as in men. Glenard of Lyons first called attention to this in 1885; his statements have since been confirmed by no less authorities than Ewald and Einhorn, with a number of lesser lights, and all agree in ascribing the almost sole responsibility for this state of affairs to the corset habit and its associated idiocies.

ECHOES AND NEWS.

American Medical Association.—The members who desire to read papers before the Section on Neurology and Medical Jurisprudence are requested to notify the secretary, Dr. C. H. Hughes, 3857 Olliver street, St. Louis, Mo.

Ravages of the Plague.—The returns of the health authorities, Bombay, February 18th, showing the ravages of the plague, report that since its outbreak there have been 6853 cases and 5447 deaths in the city, and in the entire Bombay Presidency 9911 cases and 8006 deaths.

The Woman's Medical College of New York.—This institution is making a strong appeal for financial assistance. It is said by its officers that it has reached a point where it is in serious danger of being destroyed by its own growth. An effort is being made to raise a fund of at least $200,000 as the only means of placing the institution on a secure foundation.

The Optometry Bill in the New York Legislature.—Despite the fact that a strong representative committee of doctors from Albany and New York appeared before the Assembly committee and opposed the provisions of the bill, it was reported favorably and ordered to a second reading. An effort is being made to induce the friends of the bill to allow it to remain indefinitely upon the table.

To Keep Healthy.—The following dietary is recommended: Eat fruit for breakfast and for luncheon. Avoid pastry. Shun muffins and crumpets and buttered toast. Eat whole-meal bread. Decline potatoes if they are served more than once a day. Do not drink tea or coffee. Walk four miles every day. Take a bath every day. Wash the face every night in warm water and sleep eight hours.

Roosevelt Hospital Alumni Association.—The monthly meeting of Roosevelt Hospital Alumni was held at the Hospital on the 19th of this month. Some interesting cases were shown by Dr. Homer Gibney and pathological specimens by Dr. LeBoutillier. The paper of the evening by Dr. Geo. Woolsey was upon "Massage in the Treatment of Fractures," giving the views of French and German authorities.

A Lawyer's Fee for a Doctor's Work.—It is reported that the House Surgeon of St. Catherine's Hospital, Williamsburgh, N. Y., charged the widow of a patient who had died in the hospital $25 for filling out and signing a certificate to enable her to obtain the insurance on her husband's life. The amount of the insurance was $1500. The executive committee of the hospital has been asked to investigate the matter.

The Legal Powers of Health Officers.—During a recent epidemic of smallpox in Brooklyn, Health Officer Emery sent an inspector to vaccinate a man and his family. The head of the house ordered the doctor out, whereupon the latter placed a policeman at the door and kept the family prisoners during the entire day. Suit for damages was brought against the health officer and judgment was secured placing damages at $489. An appeal was taken and is now being argued before the Supreme Court.

Tuberculous Meat Sold.—A wholesale dealer in meats has been arrested in Portland, Me., on a charge of selling beef diseased with tuberculosis. He bought a herd of cattle which had been ordered killed by the Cattle Commissioners, being badly afflicted with tuberculosis. The sale was made with the consent of the Cattle Commissioners, with the understanding that the purchaser would take the cattle to his rendering factory and try out their carcasses for grease. It is alleged that he dressed them for food, and that at least ten carcasses were brought to Portland, where they were sold to customers all over the city for food.

A Doctor Dies of the Plague.—In the beginning of January, Dr. Manser, President of the Sanitary Commission at Bombay and professor of the faculty of medicine, became ill. It was reported that he had inflammation of the lungs, but four days afterward he died, and the European hospital nurse who attended him died three days after him. The death of Dr. Manser caused profound excitement, especially when it was reported that in his blood and in that of the hospital nurse the presence of the bacilli of the plague was detected. It is now certain that the plague finds an easy lodgment in the organs of respiration when they are affected with colds or other troubles.

Insanity and Idiocy Increasing in Kansas.—It is reported that despite the decrease in population insanity is on the increase in the State of Kansas. In 1890 the two State insane asylums had 1127 patients; to-day there are 1736, or an increase in the State's insane of more than forty-one per cent., with a decrease of more than six per cent. in population. These figures do not include all those who have legally been declared to be of unsound mind. A dozen counties now have bills against the State for taking care of insane people who could not be admitted to the asylums. Authorities on the subject say that the increase is largely due to the financial stringency, worry, and discontent prevalent in the State.

Obituary.—Dr. Henry Creamer, one of the leading physicians of Williamsburg, Brooklyn, died suddenly of pneumonia at his home February 20th. He came from a family of physicians who were prominent in the Eastern District of Brooklyn. His father, grandfather, and brother were coroners of Brooklyn. Dr. Creamer was only twenty-eight years old. Dr. Saturnino M. Jiménez died February 17th at his home, 16 West Eighty-fourth street, New York, of pneumonia. He was born in Matanzas, Cuba, in 1851. His father was Antonio Jiménez, an extensive planter, who became impoverished through the ten years' war. Dr. Jiménez graduated from Jefferson Medical College, Philadelphia, in 1878, and came to New York in 1882. He leaves a wife and two children.

Extraordinary Contents of a Woman's Stomach. — Dr. Fricker of Odessa, reports an unusual case of foreign bodies in the stomach. The patient was an insane woman, thirty-two years of age, who presented herself with an apparent abscess in the left side of the abdomen. Upon opening the abscess it was found to communicate with the stomach. With all due precautions the stomach was opened, and the following bodies removed: A key, a silver teaspoon, a metal teaspoon, a fork, two wire tacks, two hairpins, two pieces of glass, one window hook, one steel pin, nine sewing needles, one piece of black lead, one shoe button, one grape stone, two small lumps of tin, and one crochet hook. The stomach was washed out with sterilized salt solution and the wound closed. The patient made a good recovery.

The Best Artificial Light.—Professor Crookes has called attention to the fact that the best form of artificial light is one containing little or no ultra-violet rays, no excess of yellow rays, and just sufficient red light to communicate a warm, pleasant tone to objects around; that light which is more than normally rich in violet and ultra-violet rays is injurious to the eyes, contributing in time to a partial destruction of the fibers of the crystalline lens, and, when excessive, producing erythema and symptoms resembling those of sunstroke—workmen in electric light works, if frequently exposed to powerful arc lights, being affected in this way. It is not desirable, however, that the light should be too rich in yellow rays, as these temporarily destroy the erythrosin or photo-sensitive substance of the retina, producing great fatigue of the nerve.

The Serum Treatment of the Plague.—All the reports from India unite in recognizing the value of the serum treatment as a means of limiting or putting an end to the bubonic plague. Just as in diphtheria, and as must be the case if the antidote is really efficacious, the cure has been most rapid when the treatment has been applied on the first day of the disease; speedy, also, but less so, when it began on the second day, and so from day to day till the fifth. Four patients have been treated at this very late period, and the only failures were in two of these. More of the serum is required in the more advanced cases. Equally striking is the manner of recovery. In twelve cases in which treatment began within two days of the onset of the complaint, the patients instead of having a lingering convalescence, were healthy men and women in a time which was always relatively short. Lord Lister, in his recent address at Belfast, says: "These details are so extraordinarily confirmatory that, small though the number of cases is, they carry conviction to my own mind."

The Horrors of the Plague.—The *Independent Belge* gives the following picture of the condition in Bombay: "The government does all it possibly can to allay the panic. Camps and tents have been set up in the public places to shelter those who have fled from houses in which the plague appeared. The salaries of the employees in the municipality were doubled, but without success. The officials fled. It is difficult to diminish the terror of the natives. Lectures, encouragement, and advice in regard to hygiene have all been worthless. It is impossible to reason with terror; and, as a matter of fact, it is necessary to have a stout heart to be able to resist the contagion of fear, when, from morning till evening, there is one continuous procession of funerals; and in the evening the sky is reddened with the fires that consume the bodies. An absolutely terrifying spectacle is presented at the Queen's road square where the Hindoos burn their dead. At a considerable distance we can see the huge columns of smoke and hear the wails of the relatives, the lugubrious sound of the cymbals, and the cracking of the blazing wood. The government employs learned doctors, who hold conferences, debate, and make propositions; but the medicines that are distributed have no effect upon the plague. The houses are whitewashed, odoriferous plants are burned in the interior, the clothes and furniture in the houses where there were deaths from the plague are also burned, and even the tiles on the roofs have been taken away for the purposes of ventilation. But all seems in vain.

The American Laryngological, Rhinological, and Otological Society.—The Southern Section of this Society will hold its next meeting in New Orleans, La., March 3, 1897, at the new St. Charles Hotel. In addition to numerous social functions the following program is announced: "Operative Treatment of Suppurative and Non-Suppurative Middle Ear Inflammations," Dr. E. B. Dench, New York; "Remarks upon Tonsil Operations with especial reference to Hemorrhage," Dr. A. W. Calhoun, Atlanta, Ga.; "Surgery of the Inferior and Middle Turbinated Bodies and Bones," Dr. Robt. C. Myles, New York; "Some Amusing Instances of Nasal Reflex," Dr. Arthur G. Hobbs, Atlanta, Ga.; clinical report of interesting cases: (1) "Two Cases of Tracheotomy for Foreign Body in the Trachea;" (2) "Cicatricial Atresia of Both Choanæ," Dr. Augustus McShane, New Orleans, La.; "The Classification and Nomenclature of Acute

Diseases of the Tonsils," Dr. T. C. Evans, Louisville, Ky.; "Sero-Mucous Cysts of the Alæ of the Nose." Dr. Norval H. Pierce, Chicago, Ill.; "Relation between Nasal and Mental Diseases," Dr. D. Ziem, Dantzig, Germany; "Turbinectomy: Analysis of One Hundred Cases," Dr. J. A. Stucky, Louisville, Ky.; "The Necessity of the Complete Removal of the Tonsils whenever Diseased or Hypertrophied," Dr. Louis J. Lautenbach, Philadelphia; "Spurs of the Nasal Septum as Factors in Diseases of the Respiratory Tract," Dr. Edward F. Parker, Charleston, S. C.; "Treatment and Prognosis of Catarrhal Deafness in Young Children," Dr. J. Aloysius Mullen, Houston, Tex.; "The treatment of Laryngeal Tuberculosis with Cupric Interstitial Cataphoresis, with the Report of Cases; The Advantages of Direct Laryngoscopy in this Method," Dr. W. Scheppegrell, New Orleans, La. Exhibition of new instruments. Session at 7 P.M. at the reception room of the French Opera House. Address by Judge A. G. Brice, Chairman Auxiliary Reception Committee, "The Division of Labor and the Development of Specialism."

CORRESPONDENCE.

LARGE DOSES OF ANTITOXIN IN DIPHTHERIA.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: The following is the fortieth case of diphtheria treated with antitoxin by the writer, and is reported because of the large amount used. Of the forty cases four were fatal. Three patients, it is believed, would have lived could the injections have been given earlier. One died ten days after supposed recovery; cause not known. The routine treatment was calomel, strychnin, saturated solution of menthol in fat applied over neck and chest, and local applications, if possible, in the tonsillar and pharyngeal cases, of Löffler's solution.

Injections were never less than 1000 units, except in two cases for prophylaxis where there was strong suspicion of beginning disease and 500 and 800 units each were used. Three cases—one fatal and two recoveries—had 3000 units each; four, all recoveries, 1500 units each.

Nearly all the patients were children from three to eight years of age. There was one adult, and one baby, ten months old. The baby was given 1000 units, and dyspnea grew so severe that six hours afterward death seemed certain. Three hours later she was found sleeping quietly.

No bacteriological examinations were made, but as an unknown number of children died during the epidemic without medical care and parents waited until they could themselves see grave symptoms before calling a physician, it is felt that the clinical diagnoses were correct. Dr. J. T. Pickerill saw the following case with the writer, and agreed in the diagnosis: January 3, 1897, 4 P.M. Pearl M., aged four years. Day of illness not known. Marked pallor, glands of neck swollen; harsh breathing, croupy cough; membrane over tonsils, which were badly swollen, covered as much of pharynx as could be exposed. Temperature, 100½° F.; pulse, 120; respiration, 24. One thousand units of antitoxin was given and at 9 P.M. 800 more, as stenosis was marked.

January 4th the membrane showed a bright red border and was beginning to clear from tonsils, but respiration was extremely labored and at 11 A.M. 1000 additional units of the antitoxin were given. As before, in six to eight hours, respiration was easier for a time and then grew worse.

January 5th it was thought that a new patch of membrane was forming on the left tonsil, and at noon 1500 units of antitoxin was injected, making 4300 in all. Between 2 and 3 P.M. the child relaxed and cuddled over in her pillow, the first time in forty-three hours. Later, forced respiration gradually ceased, and at 9 P.M. she slept quietly.

There were never any unpleasant symptoms from the serum, and recovery was uneventful. The membrane disappeared from the throat January 11th. There was no albuminuria and has been no paralysis.

Very truly yours,
ELLA CAMP, M.D.

LEMONT, ILL.,
February 3, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

GYNECOLOGICAL SECTION OF THE COLLEGE OF PHYSICIANS—REPORTS OF THREE RECENT CÆSARIAN SECTIONS—CURIOUS CASE OF SEPTIC SALPINGITIS—DR. J. CHALMERS DA COSTA ELECTED CLINICAL PROFESSOR OF SURGERY AT JEFFERSON MEDICAL COLLEGE—A NEW HOSPITAL FOR DISEASES OF THE STOMACH—DR. WILLIAM OSLER ON "THE INFLUENCE OF LOUIS IN THE STUDY OF MEDICINE."

PHILADELPHIA, February 20, 1897.

AT a meeting of the Gynecological Section of the College of Physicians held on Thursday, February 18th, Dr. Barton Cooke Hirst read a paper on "The Operative Treatment of Prolapse of the Ovary." He also reported two recent Cæsarian sections. The patients, both rachitic dwarfs, had made uninterrupted recoveries and with their children had already left the hospital, in good condition. A septic salpingitis of curious origin was also reported by Dr. Hirst. The patient was delivered about two years ago of twins. After the birth of the second child the woman declared, despite the assurance of the attending practitioner to the contrary, that there was another child. A few days later a third child was expelled in almost gangrenous condition with the subsequent septic condition of the tube. In the discussion incident to the subjects presented by Dr. Hirst, Dr. Richard C. Norris reported a case of Cæsarian section that he had recently performed. The patient had been in labor two days without any advance having been made because of a large fibroid tumor, which obstructed delivery. As soon as the doctor saw the case in consultation he decided on the operation mentioned, which was done at once. The patient, however, was already thoroughly septic and succumbed to the effects of that condition.

The election this week of Dr. J. Chalmers Da Costa to the position of Professor of Clinical Surgery at Jefferson

Medical College is a source of much satisfaction to the student body and friends of the institution. Dr. Da Costa has for years acceptably filled the posts of Demonstrator of Surgery and Chief of the Outpatient Surgical Department at Jefferson College. He is a fluent and forceful speaker and writer, a thorough teacher and a skillful operator.

The annual address before the Stillé Medical Society of the University of Pennsylvania was delivered on February 16th by Dr. William Osler of Johns Hopkins University. He had for his subject "The Influence of Louis on the Study of Medicine." Reviewing the life work of this eminent French savant he mentioned a number of his original theoretical conceptions as to the treatment of disease which have since crystallized into practical application.

Within a short time an institution to be known as The American Hospital for Diseases of the Stomach will be established in this city. The building will be located at the corner of Brown and Broad streets, and contain over fifty rooms adapted for use as wards, laboratories, and operating rooms. The objects of the hospital will be to treat all diseases of the alimentary tract, to establish a laboratory for original research, and to institute a school of dietetics.

The Board of Managers comprises some of the most influential men in the city, while the medical staff will be made up as follows: Dr. J. M. Da Costa, Dr. William Osler, Dr. W. W. Keen, Dr. James Tyson, Dr. John B. Denver, Dr. D. D. Stewart, Dr. Lewis Brinton, and Dr. E. K. Perrine.

OUR PARIS LETTER.

[From our Special Correspondent.]

THYROID GLAND IN THE TREATMENT OF EXOPHTHALMIC GOITER—CADOT'S METHOD OF CURING HUMPBACKS—YERSIN'S WORK IN CONNECTION WITH THE BUBONIC PLAGUE—THE TOXICITY OF THE URINE OF EPILEPTICS.

PARIS, January 30, 1897.

PROFESSOR FELIX VOISIN exhibited at the Academy of Medicine some time ago two patients suffering from exophthalmic goiter in whom there had been such amelioration of symptoms as to practically amount to a cure. A little later he reported two additional cases, and at a lecture at the Salpetriere last week showed a fifth case, and announced that the condition of the other reported patients remained entirely satisfactory. The only treatment employed has been the ingestion of thyroid gland, which goes to show how beautifully varied are the results of clinical therapeutics when only in the empiric stage. As the result of Owens', of Manchester, report some years ago, of improvement in Grave's disease after thyroid feeding, everyone who had a case under treatment, and a few others beside, made a trial of it. The results were, to say the least, not encouraging, but rather the opposite, so much so, in fact, that the theory was rather generally adopted that the symptoms of Grave's disease were due to overwork on the part of the thyroid, an excessive secretion of its peculiar and important principles, their accumulation in the blood and a consequent thyroid intoxication. Then for a time there was a good chance for the hypercritical to talk about the folly of "mortals rushing in where angels scarce dare to tread" and "prescribing tissue products of which they knew absolutely nothing for diseases of which they knew less." There are a number of those stereotyped expressions that make forcible writing rather easy for the obdurate critics of the poor individuals who are trying to broaden the field of therapeutics.

Then came Owens' ingenuous confession that he had been mistaken in reporting successes with thyroid medication since, through a mistake of the butcher to whom he applied for the material, it was not thyroid but thymus gland that his patients had been taking. Meantime, with the generally accepted theory of the etiology of the disease, due to the exaggerated symptoms attendant upon the thyroid treatment, that is, that the symptoms were due to an intoxication secondary to thyroid hypersecretion, a scheme of serum-therapy was evolved.

Animals were deprived of their thyroids, and after the symptoms of thyroidism (or dethyroidism) had began to show themselves, *i.e.*, at a time when the serum was supposedly totally wanting in thyroid material, it was injected into patients presumably suffering from hyperthyroidism with the idea of diluting the morbid products present, and leading to their more easy elimination. Theoretically, this serum-therapy seemed not unpromising, although the reports of any notable successes are yet wanting. Now comes another important element in the matter, and it would seem that many of our only recently acquired notions of the physiological functions of the thyroid must be changed once more. About a year ago Gley reported to the Society of Biology that the removal of the thyroid gland of animals did not produce the symptoms of myxedema usually attributed to such action. His report was confirmed later by the work of Rouxeau who had carefully removed the thyroids of sixty-five animals, but just as carefully respected their parathyroid glands—a name he gives to certain little glandular bodies, usually four in number, lying close along the thyroid—the operations always being followed by negative results as regards what has been called thyroidism, or myxedema. He now reports 105 cases in all of operations on the thyroid and parathyroid, and concludes that it is these latter hitherto neglected bodies that play the important etiological rôle in the accidents of myxedema. The conclusion is meeting with a great deal of opposition in Germany I believe, though there are some confirmatory observations from every country in Europe, but here in France at a recent session of the Society of Biology, the great opponent of the new doctrine acknowledged his submission and even reported as the result of his personal experiences that the seriousness and extent of the acute constitutional symptoms that were set up in a given case depended on the number of parathyroids removed. The removal of one had very little effect, except the production of a compensatory hypertrophy on the part of the others. The removal of two occasioned noticeable though not very grave myxedemic symptoms. When all were removed, though the thyroid was carefully respected, serious myxedema was the inevitable result.

And there, for the present, the matter rests. Only that the pleasure of hunting is in the chase not the capture, one would almost wish to lift the veil of life for the next twenty-five years and come at once upon the solutions of so many important questions in so many lines in medicine that are vexing scientific medical minds at present.

A recent report of a series of observations of the blood in myxedema, made at Bicêtre, seems to show that there are certain rather easily noticeable changes in the red blood cells. These are larger than usual and often have nuclei. Their number varies in different cases, but the variation does not seem to be a function of the disease, and bears no special ratio to its intensity. There is no leucocytosis and no noticeable change in the white blood cells. The hemoglobin is always lowered, even proportionately to the number of red blood cells when that number is considerably below the normal.

In reporting the last French Surgical Congress in October I mentioned Chepault's method of correcting to some extent and preventing the further progress of the curvature of Pott's disease by what the inventor calls apophyseal ligature. The French newspapers (what they call the political press) recently have had a number of articles on Dr. Cadot's method of curing humpback. Some of his patients were presented at the Academy of Medicine a short time ago. The method consists in forcible correction of the deformity and the retention of the spinal column in a straight position by a carefully applied Sayre jacket. It is applicable, especially it would seem, to recent cases, where the deformity is just beginning to be noticeable, and some of the results obtained seemed to have been very good. Just what it will amount to it is hard to say as its exaggerated exploitation by the non-medical press has surrounded it just now with something of a visionary air. It would seem clear, however, from results obtained by these two methods that the spinal column will, even in cases of tuberculous caries, put up with much more interference than orthopedists generally have been ready to acknowledge.

At the Academy of Medicine on January 26th, Roux read an account of Yersin's work in the treatment of the bubonic plague in Annam with serum provided by the Pasteur Institute here in Paris. Yersin, whose work with Roux on toxins, especially of diphtheria, will be remembered, was sent by the French Government to its colonies in Cochin China, for the purpose of instituting methods of combating the dreaded plague. The story, as told in a series of letters to his confrère in Paris, reads like the accounts of the old missionaries to the heathen. There was the same distrust on the part of the natives of the meddlesome foreigner, and the same objection to be the first to try the new remedy, the finding of a suitable case and opportunity at length, and then the flocking around him of so many importunate friends and relatives demanding his attention for their sick ones at all hours of the night and day, that with his stock of serum exhausted, Yersin had to leave the neighborhood where the cures had been effected.

The results obtained with the serum were very gratifying to the director of the Pasteur Institute. Twenty-six cases were treated with but two deaths, and these occurred in patients who were practically moribund when the injections were made. It is to be hoped that the much dreaded plague is to be wiped out at last as well for the sake of the poor, suffering natives as for the fact that Europe will be saved paroxysmal spasms of dread of its becoming epidemic here in the West. Occasionally, during these past few weeks there have been, according to the newspapers, some cases of bubonic plague in Paris, but this has always been denied by the health authorities.

Commerce with India is being watched very closely and the reshipment of some goods at London that had come from India and were put aboard a vessel that was to come all the way up the Seine, aroused a storm of newspaper indignation. The goods had been shipped from India, however, long before the plague broke out, a fact that perhaps the reporter of the fact originally knew very well, but the story was too good a one not to be written up.

Voisin's report of some two years ago as to the hypotoxicity of the urine of epileptic patients almost constantly, but especially just after an attack, is now confirmed by the careful report of M. Mairet, made to the Academy of Medicine also on January 26th. M. Mairet claims that this lowered urinary toxicity will enable one to detect simulation, to differentiate from hysteria, and to study with assurance the larval forms of epilepsy. Voisin's work did not attract very much attention. Anyone who has seen series of urinary injections made into animals while at the same time corresponding amounts of physiological salt solution are injected, knows how extremely unsatisfactory are conclusions founded on the reactions in the animal organism.

TRANSACTIONS OF FOREIGN SOCIETIES.

Vienna.

DECIDUOMA MALIGNUM OCCURRING DURING PREGNANCY—PIGMENTED HAIRY NEVUS CURED BY THE ROENTGEN RAY—CAUSES OF MUSHROOM POISONING.

AT the session of the Imperio-Royal Society of Physicians held January 15, NEUMANN described a case of *deciduoma malignum occurring during pregnancy* in a woman aged forty. The diagnosis was made from the local metastases occurring in the vagina. The uterus was at once curetted, and at the expiration of the puerperal period hysterectomy was performed. Neumann called attention to the necessity of frequently examining a woman in whom an hydatid mole has grown, both during pregnancy and after labor, because such a mole can very easily terminate in a malignant growth.

FRUEND reported a case of *pigmented nevus in a child treated by the Röntgen ray*. The nevus covered a portion of the neck and back and extended upon the sides of the thorax and upper arm. Portions of it were thickly covered with hair. When the treatment, which lasted two hours daily. had been carried out for eleven days the hair began to fall out, and in a short time there was a total alopecia of those portions of the nevus which had been exposed to the cathode rays. An accompanying dermatitis healed quickly under ichthyol salve, leaving the surface absolutely free from hair. Another portion of the nevus, which had been exposed to the anode rays, showed no change whatsoever. The effect of the rays was evident as early as the seventh day. It is a cumulative effect, as was shown by its continuance after the rays were discontinued. Six weeks after the beginning of the treatment there was no evidence of the return of the hair.

Semann who made the microscopic examinations in this case found an atrophy of the hair roots, the sections presenting appearances similar to those seen in alopecia areata.

Weiss discussed the subject of *mushroom poisoning* before the Medical Club January 20, 1897. Investigations have proved that mushrooms contain as high as twenty per cent. of proteid material, but that two-thirds of this passes away undigested, so that from a nutritive standpoint, mushrooms rank with other vegetables. The poisonous qualities of mushrooms may be due not only to the species, but also to the conditions under which they have been kept, and to the method of preparation. Harmless mushrooms, for instance, if gathered and kept moist may become poisonous. The most important active principle of one of the commonest of the poisonous mushrooms is muscarin. This alkaloid increases the activity of the glands and produces weakness of the heart, dizziness, ringing the ears, and death by respiratory failure. As an antidote very small doses of atropin have been recommended. In the selection of mushrooms for food those should be rejected which have become dry, as well as those which have been gathered and kept very moist.

Paris.

TREATMENT OF PLAGUE BY ANTIPESTOUS SERUM CAUSE AND PREVENTION OF BILIOUS VOMITING AFTER GASTRO-ENTEROSTOMY—A NEW METHOD OF DIAGNOSIS IN TUMORS OF THE LIVER—THE EFFECT OF COAL DUST IN THE LUNGS.

Before the Academy of Medicine January 26th, Roux read a communication from Yersin under whose direction *twenty-six cases of plague at Canton and Amoy were treated with an antipestous serum* obtained from a horse after numerous injections of plague bacilli into its veins. Three weeks after immunity was established in the animal the serum was tried on mice and found to exert a preventive action. It was then tried upon human patients. The whole number of persons suffering from the plague who were treated by this method was twenty-six. Only two of these died, both of whom received the inoculation on the fifth day. The mortality was therefore 7.6 per cent. Another proof of the efficacy of the serum treatment is the rapid recovery of the patients, whereas, ordinarily, convalescence is long and tedious even in benign cases.

Hayem read a report February 2d upon the *disintoxication of the blood.* The basis for the report was a series of cases treated by Barré. The treatment consisted in the withdrawal from one arm of the patient of a certain quantity of blood, while at the same time the same quantity of salt solution was injected into the other arm. This treatment was employed in one case of pneumonia, one of cerebral rheumatism, and two of uremia. In every instance there was a rapid recovery. Hayem called attention to the fact that these cases were of a character to be benefited by blood letting alone, so that further proof is needed before accepting Barré's conclusions as to the special merits of this method of treatment.

At the session of the Surgical Society held January 20th, Reynier discussed the *ill-effects of gastro-enterostomy and the means of preventing them* He cited instances in which patients have been seized with continuous bilious vomiting, the cause for which could not be ascertained. He thought that such vomiting may be due to a kink in the intestine where it joins the stomach. Such a condition he found once at autopsy, and on account of this kink, all the contents of the stomach were pushed back into the upper end of the duodenum, nothing passing into the lower end which was completely flattened.

This difficulty has been pointed out by a number of surgeons, and Woelfler advised twisting the loop of the intestine before suturing it to the stomach, so as to permit the gastric contents to pass freely into the lower part of the duodenum.

Quenu said that he had performed gastro-enterostomy a number of times, and that although he had never twisted the intestinal loop, he had never seen any kinking.

Chaput had observed continuous vomiting in two cases, the cause of which at autopsy was found to be an unusually short mesentery, and the selection of a point in the intestine for anastomosis too close to the pylorus. He is in favor of Woelfler's procedure, which he invariably employs.

Ricard mentioned a most interesting case of continuous vomiting after gastro-enterostomy for pyloric carcinoma. Ten days after the operation, as the incessant vomiting threatened the life of the patient, he reopened the abdomen, found the upper part of the duodenum greatly distended and the lower part collapsed. He performed entero-anastomosis. The vomiting ceased in a few hours and the patient recovered, to die eighteen months later from an extension of the disease.

Tuffier referred to the *difficulty in making a differential diagnosis in tumors of the liver.* If the question lies between a cystic and a malignant neoplasm, recourse is usually had to puncture. In many cases, however, if a careful examination be made of the hilum of the liver the presence of enlarged glands will determine with certainty the diagnosis of cancer. He also spoke of the ease with which hemostasis may be accomplished by pressure of the pedicle of the organ.

Gerard-Marchant presented specimens taken from a patient who died from peritonitis following rupture of an abscess of the liver. The abdomen was freely opened and an unsuccessful search was made for the site of perforation. Death followed in twelve hours.

At the Medical Society of the Hospitals January 22d, Bourneville showed two children of three and four years of age affected with *myxedematous idiocy* who had been *treated with sheep's thyroid.* Each child took daily for 166 days one-half a thyroid gland, that is, about half a gram. The treatment was then suspended for two months and then resumed for ninety days.

Under this treatment a great change was produced in the nutrition, and the fatty infiltration of the integument markedly decreased. During this period one child increased in length 11 cm., and the other 10 cm., that is, almost twice the natural growth. The mental development was also most marked.

FERRAND reported the case of a young man aged twenty, who became infected from a prick in the left index finger and developed axillary adenitis and septicemia with typhoidal symptoms. Death occurred twenty-six days after the infection. Inoculation of broth with splenic pulp furnished a pure culture of streptococcus, while the lesions detected at autopsy confirmed the diagnosis of grave septicemia. The interesting point in connection with this case is the fact that on the fifth day on account of the typhoidal symptoms the serum test was made, but without agglomeration either immediately or after preservation in the incubator. Two days later the axilla was incised but only bloody serum was obtained. As the typhoidal symptoms persisted, the serum test was repeated a few days later with a positive result. A second test was made two days after the first, likewise with a positive result. The case was, therefore, one in which the agglomerating reaction existed without the typhoid bacillus.

In discussing this case WIDAL thought that the investigations of Ferrand were not conducted with sufficient regard to scientific accuracy to be conclusive. Up to the present time, although the test had been applied in all countries, he had yet to learn of a case in which it was present in the absence of typhoid fever.[1]

FRANÇOIS-FRANCK at the session of the Biological Society held January 19, described the results of experiments which he had made on both dead and living animals with the thorax opened and closed, and both with and without curare to determine the *cause of death following the effusion of a liquid into the pericardium.* He found that the presence of a liquid in the pericardium by compressing the auricles keeps the venous blood from entering the heart. In order to overcome the intravenous pressure in a living non-curarised subject, the presence of the liquid in the pericardial cavity must be at least twice as great as the pressure in the veins.

CLAISSE and JOSUÉ experimented on seventy-two animals in order to study *pulmonary anthracosis.* In subjects with simple anthracosis, histologic examination showed absolutely no inflammatory reaction due to the charcoal dust, even when the animal had inhaled it in 260 sittings. A number of anthracotic animals were exposed to a number of unfavorable influences, but in the majority of cases the differences between the test and control animals was slight. An exception was seen in tuberculous animals and those in which the pneumogastric nerves had been divided. The conclusion was reached that the presence of coal dust in the lungs of a human subject is incapable of developing such ill-effects as have been attributed to it, namely, bronchitis, bronchiectasis, chronic pneumonia, phthisis, and anthracotic cavities. The coal dust in a measure may prepare the soil for these various affections and give them a somewhat peculiar anatomical and clinical character.

HARTMANN and DAQUEZ reported Jannary 30, *modifications of the blood which they ascertained to be present after splenectomy.* They also examined the blood of other patients on whom laparotomies had been performed. From comparisons of the results obtained they conclude that certain results are commonly found after various operations, while others are characteristic of splenectomy. Among the former are (1) a slight and transitory decrease in the number of red blood globules and the quantity of hemoglobin; (2) an increased leucocytosis, also transitory. Results which are characteristic of splenectomy are (1) a marked decrease in hemoglobin that lasts a long time; (2) a leucocytosis occurring slowly (one to three months) especially of mononucleated globules; (3) sometimes an eosinophil leucocytosis occurring still later (after three months).

SOCIETY PROCEEDINGS.

NEW YORK CLINICAL SOCIETY.

Meeting held November 27, 1896.

DR. ANDREW J. MCCOSH, president, in the chair.

DR. L. EMMETT HOLT presented a child aged fourteen months who was suffering from a tuberculous conjunctivitis. The patient had had a chronic purulent discharge from both eyes and the nose for some time. Her general appearance was that which formerly would have been regarded as typical of strumous ophthalmia. As the father was suffering from tuberculosis, it occurred to Dr. Holt to examine the discharge from the eyes of the child microscopically, and this being done it was found to contain a considerable number of tubercle bacilli.

DR. HERTER presented two patients for inspection, the first of whom gave the following history: He was forty-one years of age, and had had scarlet fever and syphilis, the latter complaint having existed during a period of ten years. Two months previously a hard, immovable and somewhat tender mass had made its appearance in the right umbilical region. His urine had increased somewhat in amount since that time, but its composition was normal; appetite good and bowels rather constipated. Upon examination with and without the aid of an anesthetic, the growth was found to be as described, extending from the region of the umbilicus to the anterior superior spine of the ilium, being round in shape and having smooth edges. It was rigidly fixed.

The second case was apparently one of cerebellar tumor, occurring in a laboring man thirty-two years of age. He had always been well until six years previously, when he had contracted syphilis. He used alcohol very moderately. Four years ago he began to complain of loss of memory, and his sight began to fail him, especially that of the left eye. Then a staggering gait developed, which soon became so pronounced that he was unable to walk, and a weakness of the muscles of the left side of the body and the right arm supervened. Under the administration of salicylate of mercury he gradually improved, so that power in the upper and lower extremities is now almost normal. Sensibility has been good at all times. The gait is markedly ataxic, and the speech slow and rather halting. Memory is poor. Plantar and epigastric reflexes are not obtainable. Vision fairly good, though the ophthalmoscope shows both optic nerves to be affected wtth atrophy.

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[1] In the *Wien. Wochensch.*, January 16th, Jez reports a case of tuberculous meningitis in which the agglomerating reaction was present.—ED.

Dr. Herter considered the case to be of especial interest for the reason that, unlike most cases of brain tumor, headache or vertigo had never been present, there had been no vomiting at any time, and control over the sphincters had always been perfect. He had very little doubt as to the correctness of the diagnosis of cerebellar tumor, and thought it to be located near the median line. The patient had shown remarkable improvemont under systematic treatment.

In the discussion following the presentation of these cases, Dr. Abbe, who examined the first patient, said that the tumor appeared to be too large to be a misplaced kidney. It somewhat resembled a carcinoma, but was apparently not as tender to pressure as these growths usually are. He was inclined to think it an omental growth, and that an exploratory incision was indicated.

DR. KATZENBACH, in connection with the second case, agreed fully with the diagnosis that had been made, and related an instance of a somewhat similar case in which the patient complained of intense headache, and afterward became completely blind from atrophy of the optic nerves.

DR. L. EMMETT HOLT read a paper on

SOME PHASES OF TUBERCULOSIS IN EARLY LIFE,

(published in part in the MEDICAL NEWS of December 12th, 1896).

The discussion of this paper follows:

DR. W. P. NORTHRUP exhibited some drawings of lungs containing tubercular lymph nodes, in some of which there was no evidence of disease except in these structures. His belief was that in the great majority of cases in young children the lymph nodes were first involved, the extension to the lung being secondary. In one of these drawings there was a large cavity surrounded by a dense fibrous membrane two or three millimeters thick.

Dr. Northrup fully agreed with the statement made by Dr. Holt with regard to the importance of disease of the lymph nodes in the tuberculosis of very early life. In a series of 125 cases of tuberculosis he had found 13 in which the disease was limited to the lungs, and in 9 of these the process was practically confined to the lymph nodes. Regarding the intestinal tract, he had seen just one case in which there was obviously no primary lesion of the lymph nodes.

The temperature in cases of metastasis is always high, but its occurrence is not of especial diagnostic importance. The disease may be present in the person of a plump, well-appearing child, on the one hand, or in one who is poorly nourished and weak. With regard to inherited tuberculosis, the speaker related the history of a child of a tuberculous mother that at one time had been under his charge. The child died fifty-four days after birth, and upon autopsy the lungs were found riddled with cavities. During its short life there were no indications of infection. He was under the impression that but three or four well-authenticated cases of tubercular involvement of the placenta had been reported up to the present time. A child born of a tuberculous mother undoubtedly inherited a strong tendency to the disease, but there as yet has been no proof evolved that the affection itself is transmissible.

DR. DELAVAN said the question of the infectiousness of milk is an exceedingly important one, in connection with the study of tuberculosis. He had been called recently to a neighboring state to operate on a child for adenoids. He found her to be in the last stages of pulmonary tuberculosis. Upon inquiring it was discovered that she, as well as two other children in the same family, had been fed largely on the milk from a single cow, which, on examination, was found to be in a very poor and sickly condition. The other children showed no evidence whatever of disease. He referred to the danger of infection through the medium of the tonsils, and of various adenoid growths of the pharyngeal vault, and suggested the advisability of further study of the question.

DR. MENDELSON claimed that the statements made by Dr. Holt were founded largely upon hospital experience, as, for his own part, he met with but few cases in private practice of tuberculosis in children. He could recollect but two instances, and these were in exceptionally poorly nourished subjects.

DR. JACKSON was inclined to agree with the last speaker, and asserted that many cases of marasmus are mistaken for pulmonary tuberculosis. Clinical signs in children under two years of age are seldom of much value, except, possibly, when those of consolidation are well marked. The temperature is sometimes a guide to correct diagnosis if the patient is older than two years, but in the majority of instances it is valueless as indicating either the seat or extent of the trouble. He instanced the case of a child whom he was called to see who had had a severe attack of croup, and whose temperature ranged from 99° to 101° F. for several weeks subsequent to recovery. The parents were both tuberculous, and it was thought that the child had also become infected. A change of climate for a few weeks restored the patient to perfect health.

DR. SWIFT related a personal experience with two cases in which tuberculous infection had apparently occurred through the agency of the tonsils, one case being secondary to whooping-cough. He thought that the occurrence of dyspnea was a valuable diagnostic sign.

Dr. Brown said that he would like to ask three questions of Dr. Holt in connection with the statements contained in his paper, and these were, (1) if he considered that metastasis in tuberculous disease took place through the lymph or blood channels; (2) if the presence of tuberculous meningitis was necessarily secondary to traumatism, and (3) if in his experience with tuberculosis he had found in cases where the lungs were not the primary seat of the disease, if the liver was most frequently involved, the spleen next, and the kidneys last?

Dr. Holt, in reply, said that in 211 cases he had found the spleen involved in 88, the liver in 77, and the kidneys in 46. Regarding metastasis, he thought it most frequently occurred through the lymph channels. Tuberculous involvement of the meninges, in his opinion, was sometimes secondary to injury, but by no means necessarily so.

Referring to the frequency with which pulmonary tuberculosis in children is met with in private practice, he said that he had frequently been called in to see a child in which this diagnosis had been made, only to find it suffering from broncho-pneumonia. A naturally healthy child with good surroundings rarely develops phthisis. He thought in the instance cited by Dr. Jackson that the child might have really become infected, but that the tubercular area might have become encapsulated.

REVIEWS.

The Practice of Medicine. A text-book for Practitioners and Students, with special reference to diagnosis and treatment. By James Tyson, M.D., Professor of Clinical Medicine in the University of Pennsylvania; Physician to the Hospital of the University; Physician to the Philadelphia Hospital, etc. Illustrated. Philadelphia: P. Blakiston, Son & Co., 1896.

It is always a pleasure to read a new text-book on the practice of medicine, and particularly so when the author is a physician of wide reputation. In the field of general medicine, however, there is very little room for originality in ideas and theories, and the ground has often been covered during the past few years. Dr. Tyson states that his book has been written with special reference to diagnosis and treatment, and after a careful examination it can be said that this object has been thoroughly and completely attained. The ripe experience of years has been united to the full appreciation of modern methods, and the result is highly satisfactory.

The first section, of two hundred pages, is devoted to infectious diseases, with the exception of croupous pneumonia and acute articular rheumatism, which are classified under diseases of the respiratory system and constitutional diseases, respectively. This section is one of the best in the book, and a full historical account of each disease gives it special interest and value. Rules for prophylaxis and nursing are explicitly stated in every instance. The chapter on typhoid fever is one of the most comprehensive, but there are too many repetitions, and in the management of hemorrhage the author says that a hypodermic injection of ⅛ to ¼ of a grain shall be given, the student being left to suppose that morphin is meant. Hydrotherapy is fully described, and none of the complications, excepting hemorrhage, is allowed by the author to interfere with the baths. With the Burr portable bath-tub, however, even this complication does not interrupt the treatment. No stimulation is given during the bath excepting for special reasons or to entertain or comfort the patient. In the treatment of the malarial fevers no mention is made of the use of methylene blue. The recent acquisitions to our knowledge of the plasmodium are described in a remarkably clever style.

In the chapter on cholera, an attempt is made to give in full the bacteriologic methods of examination for the bacilli; but we cannot endorse them as being sufficiently complete for a positive diagnosis. The treatment by hypodermoclysis and by enteroclysis is admirably and fully stated. In inflammation of the middle ear, occurring in scarlet fever, the author recommends paracentesis when the tension is extreme! We would not advise waiting for extreme tension, but would prefer to perforate early. This measure cannot be productive of harm if carried out with the usual antiseptic precautions, and much anxiety and danger may thus be averted. In the discussion of the treatment of pertussis, it would seem that bromoform is worthy at least of mention. In the treatment of pyemia, surgical procedures as mentioned by the author stand preëminent, and we feel that his recommendation of atropin, oil of erigeron, ergot and agaricin is almost useless.

In the light of our present knowledge, it seems quite incomprehensible that the so-called idiopathic tetanus still receives recognition in modern text-books of medicine. True tetanus can only be caused by the specific bacillus, and it is only in cases where no external lesion is *apparent*, that the old term "idiopathic" still seems to be used. We are fully aware that some cases of tetanus run a milder course than others, and that the mortality varies greatly, but if a diagnosis of tetanus be made, we must be prepared to accept the presence of the bacillus, whether or not it can be demonstrated. In the future we sincerely hope that this classification will be changed.

Section II deals with diseases of the digestive system, and the facts and methods of diagnostic technic and chemical examination are clearly and exhaustively given. Fifteen pages are devoted to appendicitis, and the history of that disease receives the attention due to so important a topic. In discussing the morbid anatomy of croupous pneumonia, the author says: "A stage beyond gray hepatization is sometimes spoken of as a stage of yellow hepatization. In this stage the lung has assumed a more yellow appearance, it is much softer, almost liquid in consistence, and more like pus. . . . . The stage of gray hepatization is the stage of beginning resolution, while that of yellow hepatization is probably one whence recovery is impossible, as it is only seen *post-mortem*." In the first place, how any stage of hepatization can be *seen* except *post-mortem* is a mystery. It has been conceded, in autopsies made at this stage in cases dying from other causes, that yellow hepatization is present in *all* cases going on to recovery, and that it is simply due to a great increase in the number of leucocytes undergoing the process of fatty degeneration. The author evidently had in mind the condition known as purulent infiltration, caused by a mixed infection, occurring either primarily or secondarily. In the treatment of pneumonia, the use of ice-cold applications to the chest is favored. Venesection early, rather than the use of veratrum viride, is properly recommended.

The section on diseases of the nervous system covers three hundred pages, and the general symptomatology is superbly written, in fact we do not know of any text-book of general medicine which deals with this subject in so complete and instructive a manner. Space does not admit of a more detailed review of the subjects dealt with in this work. At the end of the book a summary of symptoms following over-doses of poisons is given, to which is added a table of minimum doses which have caused death, and maximum doses followed by recovery; also, an appendix with tables for converting the English into the metric system, and the reverse. The index of ten pages is by far inadequate for so voluminous a volume. The illustrations are mostly good, but we think those of nasal specula and an ordinary spray apparatus out of place in a work on medicine. The type, paper and binding are good, but many typographical errors are noticed. The book as a whole is a good one, embodying as it does much personal observation and reading, and is deserving of high commendation.

APPLIED BACTERIOLOGY. An Introductory Handbook for the Use of Students, Medical Officers of Health, Analysts, and others. By T. H. PEARMAIN and C. G. MOOR, M. A. Cantab, members of the Society of Public Analysts, Associates British Institute of Public Health, etc. University Series. Pp. xiii, 360. London: Baillière, Tindall & Cox, 1897.

THE contents of this book are properly suggested by the title. The authors have handled the subject in an easy, familiar style, which renders it attractive to the reader. The classification and methods of reproduction of microorganisms might have been more clearly defined for the needs of those beginning the study of bacteriology. The description of apparatuses and the preparation of the nutrient media are satisfactorily given; but more than six pages are devoted to the description and management of a certain gas-regulator. The various methods of staining and mounting bacteria on covers and in sections follow.

"Immunity and Susceptibility" are admirably discussed, but under the heading of "Practical Disinfection" no mention is made of the uses of formalin vapor.

Six excellent chapters are devoted to the many infectious diseases, and in each instance a history and description of the organism, if known, is given, as well as the growth on the culture media, the methods of examination, occurrence and distribution, pathogenesis, and preventive measures; but not a single reference is made to bubonic plague. The serum treatment of typhoid fever, cholera, and diphtheria is clearly handled, and the technic of making injections is given in detail.

We do not agree with the statement that "the Finkler-Prior spirillum is the only one which is at all likely to be confounded with Koch's 'comma.'" The authors say that Lustgarten's bacillus is probably the specific organism of syphilis; and that the streptococcus described by Klein in 1882 is probably the specific cause of scarlet fever. These views should not have been so dogmatically expressed.

In the references to recent literature on malaria, no mention is made of the superb monograph of Thayer and Hewetson. The succeeding chapters describe the yeasts, molds, and protozoa at length. The section on the examination of water, milk, air, soil, and filters is exceedingly well written. A short description of the construction of steam-disinfectors closes the text. The book is well printed on good paper, and the wood-cuts are satisfactory. At the end of the book are a number of colored plates taken from the recent admirable work of Lehmann and Neumann, yet without giving due credit.

QUAIN'S ELEMENTS OF ANATOMY. Appendix. Superficial and Surgical Anatomy. By PROFESSOR G. D. THANE and PROFESSOR R. J. GODLEE, M.S. Illustrated by twenty-nine engravings. Tenth edition, Pp. 76. Longmans, Green & Co., London, New York, and Bombay, 1896.

BY the publication of this brief appendix on superficial and surgical anatomy, the tenth edition of Quain's "Anatomy" is finished. The work is now complete in nine parts, which are conveniently bound and sold separately. The appendix to the work contains much that is old and little that is new, as might be expected; but the matter is put into accessible form and is illustrated by several excellent new plates. The pages devoted to endocranial blood-vessels and cranio-cerebral topography are particularly valuable, and the exact location of the mastoid antrum, the lateral sinus, the middle meningeal artery, and the cerebral lobes are so clearly indicated in the colored plates which accompany the text that this section of the book will be often referred to in connection with brain surgery.

In the sections on inguinal and femoral hernia, the fascial planes, and their relations to the bones and soft parts are clearly described and are still more clearly drawn. It is difficult to suggest any addition by which the anatomical basis of the usual forms of hernia could better be brought before the mind.

The section on the abdomen is, unfortunately, meager, and some of the space which has been given all through the work to details which belong to descriptive rather than regional anatomy might well have been devoted to a more thorough description of the position of the abdominal organs.

THE MEDICAL RECORD VISITING LIST FOR 1897. New York: Wm. Wood & Co.

THIS handsome visiting list will maintain its reputation for beauty and usefulness in the edition for the new year. It contains many lists and tables for emergencies and for rapid consultation, and is in every way commendable.

New York County Medical Society.— Professor Osler of Johns Hopkins University, read a paper before this society on Monday evening, February 22d, on the "Diagnosis of Malarial Fever." During his remarks in the discussion that followed, he made the somewhat startling assertion that death from malaria in the region north of Mason and Dixon's line is almost unknown.

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ORIGINAL ARTICLES.

THE DIAGNOSIS OF MALARIAL FEVER.[1]

BY WILLIAM OSLER, M.D.,
OF BALTIMORE;
PROFESSOR OF MEDICINE IN THE JOHNS HOPKINS UNIVERSITY.

AMONG a multitude of points of great interest in malarial fever the following may be emphasized:

1. It was the disease best known to the old Greek and Roman physicians, some of whom gave very clear clinical pictures of the chief varieties.

2. It remains, after two hundred years, the only acute infectious disease for which we have a positive specific.

3. It is the most important known disease due to protozoon parasites.

4. North of Mason and Dixon's line physicians are prone to diagnose malaria for other diseases; south of the line they are more prone to diagnose other diseases for malaria; in both regions it is a source of greater errors in vital statistics than any other affection.

It is not my intention to bore you with any detailed account of the hematozoon malariæ, but I would remind you that there are three well recognized varieties. (1) The tertian organism, which matures in forty-eight hours and produces quotidian paroxysms if two groups are present, tertian if there be only one. This is the common parasite of the simple intermittents of the spring and early autumn. (2) The quartan parasite, which has a cycle of development of seventy-two hours, and, if only one group of organisms is present, causes the regular quartan intermittent; if two or more groups are present, the paroxysms may be daily or every other day. The quartan parasite is a rare form. There have been only about fifteen cases among 1000 examined at my clinic. (3) The parasite of the irregular malarial fevers (estivo-autumnal form)—the remittent, continued, and pernicious types. This variety is smaller, less easily recognized, is not so abundant in the peripheral circulation, and, in the pernicious forms, may have curious seats of election, as in the brain or intestines. It is further characterized by the development of the crescents, a distinctive and characteristic form of great moment in diagnosis.

The recognition of the invariable association of these parasites with all forms of malarial fevers, of their etiological relation to the disease, and of their importance in diagnosis, has resulted from the labors of Laveran, and of his followers in Italy, and in this country. I cannot forbear a word of warm commendation of the way in which our Italian colleagues have persistently followed, and with such success, the many problems connected with the life history of the parasite. Anyone who wishes to keep abreast of the world's work on malaria must know the Italian literature. Much remains to be worked out—the relations of these varieties to each other, the significance of the crescents and of the flagellate form, the life history outside the body, and the mode of infection. Is it a facultative parasite? Is it possible that in infected districts persons may harbor it and show no symptoms, as is the case with the filaria and the anchylostoma? How long may it lie *perdu*, so to speak, in the body?—surely questions enough to satisfy the cravings of the younger generation of workers.

A word before I pass on to the subject in hand. To obtain a correct knowledge of the forms of the malarial parasite requires months of careful study, with plenty of material. There have been papers published in this country and in India which bear ample evidence that the authors have approached the problem without due technical preparation. Two educational points are particularly to be noted: the changes which the red corpuscles undergo on a slide after twenty-four hours on the warm stage, and the irregular forms of vacuoles which are not infrequent in the red corpuscles in some fevers, particularly scarlet fever and measles. I would urge particularly as a *sine qua non* in all doubtful cases, and especially in supposed mixed infections, as with malaria and typhoid fever, that cover slip specimens of the blood be preserved, which, if necessary, could be submitted to the judgment of an acknowledged expert.

The recognition of malaria is fortunately in a large majority of all cases a very easy matter. The subject for discussion may be indicated under three headings: 1. The diagnosis of the regular malarial intermittent fevers. 2. The diagnosis of the irregular remittent and pernicious forms. 3. The spurious malaria of the Health Boards.

1. THE SIMPLE INTERMITTENTS.

The tertian infection, the only common one in this country, is characterized by a paroxysm developing at the end of forty-eight hours, if a single group of parasites is present; at the end of twenty-four hours, if two groups exist, one of which maturates every day. There are three features by which an ague can be recognized:

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[1] Read before the Medical Society of the County of New York, February 22, 1897.

(*a*) The character of the febrile paroxysms. Take any large series of carefully recorded temperature charts, such as have been made in my wards during the past seven years,[1] and it is found that the duration of the pyrexia from the rise above 99° F. to the fall to normal is from eleven to twelve hours, rarely shorter, still more rarely longer.

(*b*) The blood shows the hematozoa in all stages of development. Practically they are never absent in uncinchonized individuals. There is no leucocytosis.

(*c*) The administration of quinin checks the further development of paroxysms and causes a rapid disappearance of the parasites.

During last year I saw in private, or there were brought to my wards, cases with intermittent paroxysms of fever believed to be due to malaria, but which subsequently proved to be the following conditions: abscess of the liver, tuberculosis, influenza, gonorrhea, endocarditis, otitis media, gall-stone fever, post-partum anemia, typhoid fever, and septicemia. There are other affections, such as syphilis and many obscure septic infections, with which recurring chills may be associated. There are also remarkable cases of cryptogenetic septicemia with daily chills—cases in which tuberculosis and malaria can be almost positively excluded. Dreschfeld of Manchester has described a form of this as idiopathic intermittent fever of pyemic character. It must be confessed that the regularity of the chills, often of a quotidian or tertain type, and the obscurity of the cause, make the disguise very complete. The three points just referred to suffice, as a rule, to clear up the diagnosis. The length of the paroxysm in septic cases is rarely so long and not so fixed in recurring attacks. Shorter periods of pyrexia, six to eight hours, are the rule; occasionally they are longer, eighteen to twenty-four hours. This point, together with the presence of a leucocytosis, the great increase in the blood plates, the absence of the hematozoa, and the resistance to quinin, serve to exclude malarial infection. To one or two of these conditions I may refer briefly.

It is not sufficiently recognized in the profession, particularly in malarious regions, that pulmonary tuberculosis very frequently sets in with chills and fever. In Baltimore I not infrequently see cases in which the patient has been treated persistently with quinin, until the aggravation of the cough, or the occurrence of hemoptysis has aroused the suspicion that the lungs were affected.

Abscess of the liver is almost always at first treated for malaria. The recurring chills and fever, and the sallow tint, lead, not unnaturally, to this mistake, which is made even in regions in the North which are quite free from paludism.

Another condition of the liver is a common source of error, namely, gall-stone fever. I do not refer to the chill during the passage of the gall stone, nor to the recurring chills in the pyemia of suppurative cholangitis, but to the recurring paroxysms of intermittent fever for months or even for years in connection with the lodgment of a stone in the common duct.

II. THE IRREGULAR MALARIAL FEVERS.

In reality the chief difficulty in the diagnosis of malaria is in the recognition of the remittent fevers which simulate typhoid, of certain pernicious types with special localization, and of certain chronic infections. Every year we have a few cases of malarial remittents which are at first mistaken for typhoid fever and tubbed. I show you here a chart of the last case of this kind.

The patient, Edward Reip, aged twenty-one, was admitted October 2d, complaining of headache and pains through the body. He had had malaria five years ago; otherwise there was nothing of special moment in his history. On the 29th of September, three days before his admission, he had a wetting, and on the following morning awoke with a violent headache, and felt so badly that he worked with difficulty. He stopped work the day before admission. He felt cold, but had no chill. He had lost his appetite. There was no nausea and no vomiting.

When admitted his temperature was 105° F., face was slightly flushed, the tongue furred and white. The examination was negative with the exception of the spleen, which was enlarged and slightly tender. The patient looked very ill, and his temperature on the evening of admission rose to 106° F., and he was given a tub bath. For seven days this patient was treated for typhoid fever, and during this time he had thirty-two tubs. He had no chills, no sweats; the tongue was furred, the cheeks flushed, lips red; the spleen was readily palpable. The blood was examined by the house physician each day, sometimes twice a day, with negative results. On October 9th Dr. Thayer found in the peripheral blood a number of actively moving ameboid bodies. On the evening of the 9th he was given ten grains of quinin hypodermically, and then five grains every four hours. His temperature fell gradually and reached normal three days after beginning the administration of quinin. In this patient the anemia did not develop until after the end of the first week of the disease.

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[1] See the Monograph by Thayer and Hewetson, "Johns Hopkins Hospital Reports," vol. v., and Dr. Thayer's article in vol. i. of the recently issued "American System of Medicine," by Loomis and Thompson.

I mention this case in detail because it illustrates a very important point in the clinical history of these cases, namely, that in certain forms of infection with the organism of the irregular malarial fever the parasites are at first very scanty in the peripheral blood, and may be, in fact, overlooked for some days.

With us it has been very much more common to mistake malaria for typhoid fever than typhoid fever for malaria. The following are the important points of differentiation:

First. The mode of onset.—In malarial remittent fever there is not the initial period of malaise and ill-health; the onset is more sudden; chills are much more frequent. They are not, however, always present, as in the case of which I have just spoken. On the other hand, chills at the onset of typhoid fever are not very uncommon. Of 79 cases treated during the sixth year of hospital work, in which this point was inquired about particularly, there were 13 in which the disease began with shaking chills. Epistaxis is rare in malaria.

Second. The fever, which presents three points of great importance in the differentiation.

(*a*) The slow, step-like ascent to the fastigium is not met with in malaria. The rise is abrupt, and on the first or second day the temperature may reach 104° or 105° F. You will see in the chart passing around that the temperature on the third day in that patient reached nearly 106° F. in itself almost enough to exclude typhoid fever.

(*b*) The malarial remittents never have the remarkable continuous type of fever which we see in typhoid after the fastigium is reached. No other disease, except pneumonia, presents the same persistent pyrexia, with perhaps not more than a degree or a degree and a half of diurnal variation. This is characteristic particularly of the second week of the disease, or from the fifth to the twelfth day. In the estivo-autumnal infections the remissions are, as a rule, marked—two, three, and even four degrees.

(*c*) In the later stages, say in the third week, when in typhoid fever there are wider excursions and marked remissions, the pyrexia in the remittent fever becomes much more broken, is apt to be more intermittent in character, and the temperature may even be subnormal for several hours of each day.

Third. The general appearance of the patient.—Walking through a ward containing malarial intermittent cases and typhoid fever patients one can usually pick out readily those with the former disease. The early anemia and sallowness are very characteristic. This is not the case with malarial remittent fever. During the first week the aspect may be typically typhoidal, the expression dull and heavy, and the cheeks flushed. Marked anemia and the sallow tint may not develop until the patient has been under observation for a week or more.

Fourth. —The gastro-intestinal, bronchitic, and nervous features offer less valuable criteria of differentiation. Herpes on the lips, when present, is important because of the great rarity in typhoid fever and the great frequency in malaria. The tongue in remittent fever is usually more coated, pasty, and white early in the disease. Bronchitis is common in both. Mental hebitude and delirium, while more common in typhoid fever, are not at all infrequent in the severer types of the estivo-autumnal fever.

Fifth. The examination of the blood.—The very first slide looked at may give the diagnosis. In other instances repeated examinations may be necessary, and the case to which I have referred is not at all unique in our experience. The paucity of the organisms in the peripheral circulation is very unfortunate just in these cases, as it may leave the diagnosis in doubt for several days. A systematic examination of the blood in any estivo-autumnal form is sure to be rewarded by the detection of perfectly distinctive forms, if not of the intracellular, of the characteristic crescents. Widal's test, too, will prove of great use. You will notice in the chart passing around that it was not present on October 8th, the eighth day of the patient's illness, and the day before the organisms were found in the blood, and this, with the irregular temperature, made us renew our efforts to discover the parasite.

Sixth.—Quinin has no influence on typhoid fever. Properly administered, it checks the malarial remittent fever in from two to four days.

There are other points of differentiation, but these are the most important.

In connection with this question there arise two important points for discussion: How far, in paludal regions, does typhoid fever present malarial aspects? It is the rooted and grounded belief of a very large section of the physicians of this country that typhoid fever very often presents "malarial features." The phrase is on their lips constantly. Failure to recognize the extraordinarily protean character of the disease is in the main responsible for this delusion, behind which lies a sort of feeling that a fever with malarial aspects is less apt to be serious. So far as my personal experience is concerned, typhoid fever is a singularly fixed disease in its composite picture, as taken, say, in centuries of cases. I saw the disease for ten years in Montreal, the General Hospital of which offered a very rich field for its study. The cases which came under my care during five years at the University and Blockley Hospitals in Philadelphia presented no essential changes. Many of the cases came from regions infected with malaria. During the seven years and nine months in which the Johns Hopkins Hospital has been opened, there have been in my wards more than five hundred cases of typhoid fever. A considerable number of these came from the outlying districts of the city, in which malaria is very prevalent, and from which our cases of that disease come. Any one may judge from the studies on typhoid fever, issued in Reports of the Johns Hopkins Hospital, Vols. IV. and V., that the disease presents no variations from the universally recognized picture of the disease. We know nothing of typhoid fever with malarial features; on the other hand, we know a good deal, as you may judge from the chart, of malaria with typhoid features.

How often do combined infections occur with the hematozoa and Eberth's bacillus? Very seldom; much less frequently than with the pneumococcus and with the ameba coli. Among the 1000 cases of malaria and the 500 cases of typhoid fever which have been at my clinic, almost every one of which has had a blood examination, there has been but one doubtful case of double infection. So far as I know, Dr. Gilman Thompson's cases are the only satisfactory ones observed in this country. The subject is one deserving of careful study. We have been in the habit of making blood examinations in all of our typhoid cases, and as the double infection is usually with the tertian organism, I can speak with some measure of positiveness as to the accuracy of our results. I would ask particularly that in doubtful cases cover-slips be kept for expert examination. This is not a matter to be left in the hands of the inexperienced house physician. In other double infections quinin causes the hematozoa to disappear within a few days, and the case proceeds without showing signs of special influence, and this was the case, I believe, with Dr. Thompson's patients.

Certain symptoms, particularly chills and sweats, are prone to deceive the physician who has not learned to recognize them as not infrequent events in typhoid fever, associated with complications or with septic infection.[1]

I need scarcely here refer to other forms of irregular malarial fever—the more pernicious types. They are not very common with us, though in the autumn we have to be on guard constantly to avoid mistakes, and we have, as a rule, one or two fatal cases a year.

III. SPURIOUS MALARIA.

What is spurious malaria? I do not know. One form of it is a serious and very fatal disease, killing, according to the last United States Census Report, in New York as many persons as does typhoid fever, in Brooklyn about one-third as many more. I suspect the Eberth bacillus, not the plasmodium malaria, is responsible for the major part of these cases. Other maladies, a motley host, from headache to biliousness, from keratitis to chilblains, are attributed to "a touch of malaria." Any slight ailment with a periodic tendency, any dubious trouble for which a diagnosis is not forthcoming, is put in the same category. While I do not deny that in regions where malaria is endemic, and everybody comes under its influence, many obscure troubles follow in its train, I claim that the disease in the temperate regions of this country is well defined and easily recognizable, that north of the Chesapeake the fatal forms have become so rare that no health board should take a death certificate signed "malaria" without investigation, and, lastly, that the widespread belief in an occult influence of the disease, in masked forms, and in the modification by it of other affections, has no rational basis of support.

It is just eleven years since I began the study of malarial fever in the Blockley Hospital, Philadelphia—a skeptic as to the value of Laveran's work, to which attention was called in this country by Surgeon-General Sternberg and Dr. Councilman. I soon became convinced of its truth, and the results of my study of seventy cases was published in 1887. Since that time, at certain seasons, I have had almost daily opportunity to see malarial fever, and I have of late years been fortunate in having as my associate Dr. Thayer, who has made a special study of the disease, and in Baltimore has kept us in touch with the progress of knowledge in this department. A widened experience has only served to strengthen the conviction that in the practical diagnosis of the infectious diseases, the discovery of the hematozoa of malaria by Laveran takes rank with the finding of the tuberculosis bacillus by Koch.

BLOODLETTING IN PNEUMONIA.

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MORE than 41,000 people died in New York City during 1896, and of these 5383, or nearly one-seventh, died of pneumonia. These figures do not include deaths where pneumonia was a complication. We have in pneumonia, therefore, a disease which contributes more to our death-rate than any other single disease. It is a lamentable fact that, in spite of our boasted advances in medicine, the mortality from pneumonia is greater to-day than it was fifty years ago. Townsend and Coolidge,[1] from a study of all the cases of this disease treated at the Massachusetts General Hospital from 1822 until 1889, one thousand in number, very ingeniously conclude that this increase in mortality is deceptive, and is entirely independent of treatment. The average mortality in the sixty-seven years reviewed by them was twenty-five per cent., ranging from ten per cent. in the first decade to twenty-eight per cent. in the last. They say, "This increase is deceptive, for the following reasons, all of which were shown to be a cause of a large mortality: (*a*) The average age of the patients has been increasing from the first to the last decade. (*b*) The relative number of complicated and delicate cases has increased. (*c*) The relative number of intemperate cases has increased. (*d*) The relative number of foreigners has increased. . . . These causes are sufficient to explain the entire rise in the mortality. Treatment which was heroic before 1850, transitional between 1850 and 1860, and expectant and sustaining since 1860, has not, therefore, influenced the mortality rate," nor has treatment, they add, "influenced the duration of the disease or of its convalescence."

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[1] "Chills in Typhoid Fever," *University Medical Magazine*, November, 1895.

Statistics taken from the reports of the New York Hospital show a like increase in the mortality from pneumonia, and I think, are more valuable, as they are based on a much greater number of cases.

Years.	*Mortality per cent.*
1834–1843	25.4
1844–1853	25.7
1854–1863	23.8
1864–1870	27.7
1870–1877	Hospital closed.
1877	New hospital opened.
1877–1886	38.8
1887–1895	34.7

As far, therefore, as hospital statistics can be relied upon as a guide, the mortality from pneumonia has increased ten per cent. or more in fifty years. We have the explanation of this increased mortality, according to Townsend and Coolidge, and they state it as their positive opinion that change of treatment has not influenced the mortality rate. Such an explanation is soothing to pride and the conscience, but I, for one, am not satisfied with it, and am fully convinced that the increased mortality in pneumonia is partly due to a change of treatment, which necessarily has been a change for the worse. In the years from 1834 to 1853, at the New York Hospital, where the mortality was a little over twenty-five per cent., the main factors in treatment were, first, an initial smart purge; second, early, copious and often-repeated bloodletting; third, increasing doses of tartar emetic, and, fourth, blisters to the chest, generally after the fever had subsided. In the years from 1854 to 1863, when the lowest mortality, 23.8 per cent., was recorded, the treatment was on about the same lines, but much less heroic. The initial purge was given, the patient was generally bled, but not heroically, and seldom more than once, tartar emetic was given in sudorific doses only, and blisters were not much in vogue. In the years from 1864 to 1869, the treatment was, as Townsend and Coolidge call it, "expectant and sustaining," and the mortality was 27.7 per cent. In 1870 the old hospital was abandoned, and the first decade in the new hospital, aseptic throughout, from 1877 to 1886, showed a mortality of 38.8 per cent. The treatment at this period was largely stimulating (alcohol, digitalis, etc.), and antipyretic with drugs, mostly quinin, depletion and derivation being confined to dry-cupping and mild purgation. During the last nine years, 1887 to 1895, the mortality has apparently diminished somewhat, having been 34.7 per cent. During this period antipyretic drugs have been used, also vascular sedatives (other than bloodletting) and stimulants; but during this time some agents promoting oxidation and elimination, principally ice-bags and cold baths, have been sparingly employed, many think, with advantage.

It would seem that our modern notions as to the pathology of pneumonia have helped us very little in the treatment of the disease. In 1840, when pneumonia was looked upon as a simple inflammatory affection, Craigie laid down its treatment as follows: (1) An initial purge and free venesection, both sometimes, the latter generally, repeated; (2) tartar emetic in vascular sedative and diaphoretic doses; (3) diluent drinks and diuretics (chiefly nitre) to keep the kidneys active; (4) blisters to the chest, generally as the fever began to subside. The bowels were kept rather loose and the air of the room constantly cool. This treatment resulted in a hospital mortality of about twenty-five per cent., while, fifty years later, the disease being classed as infectious, the mortality is ten per cent. higher.

In our flight after microbes may we not overlook some very essential but homely details of treatment? Our knowledge does not enable us to kill the pathogenic germs, hence our treatment should be in the direction of oxidizing and eliminating the poison they generate, relieving the mechanical disturbance created by consolidation, and supporting the patient until the toxic storm has passed. The latter necessity has long been met by the administration of nutritious liquid food and alcohol The importance of intensifying oxidation by cold fresh air, by oxygen, and by local cold applications and cold bathing, is daily being more appreciated, while the re-establishment of secretion and elimination by skin, kidneys, and bowels, principally the two latter, is hardly less important and is brought about partly by the cold and partly by salin diuretics and cathartics.

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[1] "The Mortality of Acute Lobar Pneumonia." Tr. Am. Climatological Assn., 1889.

The mechanical disturbance produced by intense pulmonary congestion and consolidation has been much neglected of late years. I advance the suggestion that obstruction of the pulmonary circulation and consequent embarrassment, weakening and dilatation of the right heart and backing up of venous blood is not caused by, nor commensurate with, pulmonary consolidation. Theoretically, we expect speedier cardiac embarrassment where large areas are hepatized; practically, it would seem as though the intense and general pulmonary congestion often present, and sometimes occurring with an insignificant amount of solidification, offered sufficient resistance to the pulmonary circulation to explain all symptoms dependent thereon. Explain its cause in any way we please, we know that, sooner or later, in all bad cases of pneumonia, the right heart never empties, venous distension occurs, the whole heart begins to fail from dilatation and want of oxygen, the pulmonary congestion is intensified and pulmonary edema ends the scene.

For averting or relieving this mechanical condition, depletion is the only rational procedure, and, when weighing the claims of depleting agents, there is found only one possessing the advantages of simplicity, safety, speed, and efficacy, and that is the sudden abstraction of a variable but considerable amount of venous blood. Diaphoresis is insufficient, diuresis too slow and uncertain, safe catharsis too slow, speedy, effective catharsis too dangerous. Judicious venesection has none of these drawbacks and is only kept from its deserved sphere of usefulness by a mouldy tradition of ancient immoderation.

The teachings of nature should never be ignored, and for that reason I append brief notes of two hitherto unpublished cases of pneumonia in which spontaneous hemorrhage, followed as it was by speedy improvement, seemed conservative if not curative.

The first case was observed in 1892 by Dr. Jennie M. Richardson of New York, who kindly allows me to report it.

The patient was a rachitic girl of five years. On January 18th she complained of headache and pain in the right side. She had anorexia, fever, and a severe cough. Two days later she coughed up considerable red, frothy blood, and experienced marked relief. Blood-stained sputum persisted for several days. When first seen on January 23d she had all the outward indications and physical signs of croupous pneumonia. Her temperature was 39.3° C. (102.8° F.), pulse 140, respiration 52. During the morning of January 24th she complained of a pain in her side, and at 1.30 P.M., after a fit of coughing, there was another hemoptysis of about 30 c.cm. (℥ i) of red, frothy blood. Relief from the pain followed the hemorrhage, but the child remained feverish, restless, and wakeful. January 25th there was improvement in all symptoms, the temperature being 38.3° C. (101° F.), pulse 132, and respiration 33. The next day convalescence was assured.

The second case was seen in 1894 by Dr. Miriam T. Runyon of New York, by whose permission it is here reported.

The patient was a previously healthy girl of seven years. At 10.30 A.M. on the fourth day of a typical pneumonia, the child had a temperature of 39.4° C. (103° F.), pulse of 128, and respiration of 48. At 12.30 P.M. she had a severe nose bleed lasting nearly two hours. The mother saved 270 c.cm. (℥ ix) of blood. Immediate improvement and relief from pain followed. At 4 P.M. the temperature was 36.7° C. (98.2° F.), pulse 100, and respiration 28. Uninterrupted and rapid recovery supervened.

It is unnecessary to say that both these cases were very intelligently treated, the latter by calomel, diuretics, and external cold, but neither showed marked improvement until local congestion was relieved by sudden depletion. In another case, reported by Dr. D. A. Staunton[1] of Lexington, N. C., a profuse hemorrhage from the bowels was followed by very striking but not so immediate improvement.

If we see spontaneous hemorrhage, provoked by irrepressible congestion, so beneficial, why should we hesitate to resort to a timely employment of so harmless and potent a remedy? Why, indeed, unless we are slaves to fashion, even in medicine and incapable of throwing off a blind, unjust prejudice!

DISEASES OF THE FRONTAL SINUSES AND THEIR TREATMENT.

BY FRANK WISTER THOMAS, M.D.,
OF PHILADELPHIA.

IN considering diseases of the frontal sinuses it is necessary to recall the anatomical relations of the parts in order to appreciate the symptoms presented. The sinuses may be described as two irregular triangular pyramids, each having an orbital plate of the frontal bone as a floor, two of the sides of each being formed by the inner and outer plates of the frontal bone, and the remaining side of each being formed by the septum, which is so frequently perforated as to render the sinuses pathologically one cavity. This region is lined by mucous membrane which is continuous on each side through small openings or infundibula with the mucous membrane of the nasal chamber. In some subjects foramina offer communication with the ethmoidal sinuses. Apart from those due strictly to traumatic causes, all diseases of this locality originate in the nasal membrane and present such modifications of the various catarrhal processes as are consistent with the nearly closed condition of the chambers. They may be classified as acute and chronic catarrhal inflammation, mucocele, and abscess or empyema, in addition to which we have such extraordinary conditions as are produced by foreign bodies, as the entrance of insects, or the lacerations and punctures due to wounds.

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[1] *North Carolina Med. Jour.*, March, 1889.

Acute catarrh of the frontal sinuses is present in a minor degree in nearly all cases of acute coryza in the adult, but retention diseases, as mucocele and empyema, are exceedingly rare. Dr. B. Alexander Randall of Philadelphia reports that in a practice of over 1200 cases yearly, requiring nasal examinations, he has not met with one case of empyema that was strictly his own case; and of 2237 nose and throat cases reported last year from the Brooklyn Hospital only three cases of catarrh of the frontal sinuses are mentioned. As hospital statistics necessarily contain a larger proportion of exceptional cases than is to be found in private practice, I addressed communications to a number of gentlemen engaged in nasal practice, in this and other cities, and from all I have received assurances of the extreme rarity of the conditions under consideration.

The symptoms of catarrh of the frontal sinuses are those of ordinary acute coryza plus frontal and supra-orbital headache of a boring and persistent character, increased by movements or by mental effort or by the use of alcohol, and occasionally accompanied by nausea and vomiting. Pressure at the internal angle of the supra-orbital ridge usually occasions intense and severe pain. When the inflammation becomes chronic and the mucous is retained, the condition known as mucocele exists. It may be produced by any cause which obstructs the infundibulum, and while usually unilateral, may affect both sides. Sometimes the distension is so great that crepitation may be heard and felt upon pressure over the affected region. In rare instances, also, a soft fluctuating tumor forms at the inner angle of the orbit. One gentleman, with a large hospital and private practice, informs me that he has only seen one such case.

Abscess, or empyema of the frontal sinuses, is only to be differentiated from mucocele by the greater severity of the general symptoms, by the creepings or positive chill of the pyemic state, and by the purulent rather than the mucous discharge from the nostril. When the obstruction of the infundibulum is complete we may have either the internal subsuperciliary tumor, before mentioned, or, from backward pressure, brain symptoms, which may terminate in a purulent meningitis. There is one symptom which has been observed by Dr. James Darrach, as occurring in at least two cases, which came under his observation, the significance and constancy of which, are uncertain. This consists of an intermittent feeling of falling, hardly a vertigo, but rather a sensation of pitching forward, with loss of muscular coördination. In one of the cases reported, the condition was somewhat relieved by blowing the nostril, and completely disappeared after the discharge of a large quantity of pus through the nasal outlet. So marked was the symptom that the doctor was summoned by the patient, not to attend a nasal, but what was regarded as a brain, condition.

Answers to communications addressed to a number of specialists concerning this symptom elicited little that is satisfactory, only two of my correspondents having noticed the symptom in any degree. One speaks of having observed a slight dizziness, and another noticed vertigo in one case of specific origin. As to the reflex or anatomical cause of this condition, clinical observation will probably clear up the question if its frequency and constancy are ever studied. While at first inclined to look on the cause as due to a disturbance of the cerebral circulation, the answers from my correspondents lead rather to the view of a reflex origin, for the reason that cerebral circulatory disturbance must be present in all cases of mucocele or empyema; and yet from numbers of cases reported I can find only the four cases of vertigo mentioned, one physician reporting three cases of unassociated empyema, and two cases associated with disease of the ethmoidal cells, but even in the latter cases no symptoms of vertigo were observed. These facts, taken into consideration with the established observation that peripheral irritation of the trigeminus at times produces "nasal vertigo," would point to the reflex origin of the symptom in the disease under consideration.

As regards treatment little can be said except that the nasal chambers must be kept free and clear by means of various alkalin sprays and astringent applications to allay local irritation; but in this connection I think that the constitutional or general circulatory state is being lost sight of in our enthusiasm for local treatment. There are two drugs which were much used by our forefathers, and are still used by homeopaths that will frequently modify the severity and duration of the disease. They are aconite and belladonna. For some years I have been in the habit of prescribing drop doses of each of these drugs every hour or two, in the earlier stages of catarrhal affections, and have met with most favorable results. During the *grippe* epidemic of 1890 I had the opportunity of comparing the results of this treatment with that by salol and phenacetin, and found that, although less theatrical as regards the cessation of pain, they were more permanent and pleasanter in the relief of the catarrhal symptoms. Attention to the bowels is another important point, and the selection of the purgative is of equal importance. Too much scientific reasoning has obscured scientific observation in many cases, and the books give general directions to "move the bowels," but clinical observation will see better and speedier results from the administration of divided doses of either blue mass or calomel frequently repeated until the liver is slightly stimulated, than can be obtained from the use of salin or vegetable cathartics *ad nauseam*. Having been instructed to fear and dread the cumulative effects of drugs, and particularly the depressant effect of aconite, I exercise the precaution in patients of advanced age or in those having a feeble heart of prescribing at the same time large doses of strychnin, but I have practically never seen anything like depression follow small doses of aconite given in an acute catarrhal state, whereas I have seen cyanosis follow the administration of several of the antipyretics.

THE PHYSIOLOGICAL ACTION AND THERAPEUTIC USES OF YEAST NUCLEINIC ACID, WITH SPECIAL REFERENCE TO ITS EMPLOYMENT IN TUBERCULOSIS.

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(Continued from page 264.)

TUBERCULOSIS.

THE principal object in writing this paper is to continue the record of my experience in the treatment of tuberculosis with yeast nucleinic acid. Before taking up the report of cases I wish to make some inquiry concerning the curability of tuberculosis.

The incorrect ideas of Virchow concerning the pathology of tuberculosis, and the equally erroneous clinical teaching of Niemeyer concerning the malignancy of this disease, have been so deeply impressed upon the profession that, although more than thirty years have passed since Villemin laid the foundations of correct knowledge by the discovery of the transmissibility of the disease from man to animal, and from animal to animal by inoculation, the shadow of the older teaching still falls upon us. If I may be permitted to modify and condense one of Cohnheim's statements on this point I should say: It happened fortunately that at the very time when Virchow was proclaiming the perfection of his teaching concerning the pathology of tuberculosis a discovery which was destined to prove his teaching erroneous was made in France.

Virchow attempted to make a sharp distinction between true tuberculosis and those processes in which caseation is, according to his teaching, due to inflammatory and hyperplastic processes. He taught that caseous pneumonia and scrofulous glands were not tubercular. The result of this teaching was that tuberculosis came to be regarded as a progressive process in which small malignant growths were formed, and which only exceptionally terminated otherwise than in death. Niemeyer founded his clinical teaching upon this pathology, and in doing so he employed statements more forcible in diction than true in fact, and these statements have not lost their influence upon the profession, although science has demonstrated their falsity. "The end of tuberculosis, as a rule, is death," is a statement which today largely determines the attitude of the medical profession towards the disease. "The greatest misfortune that can happen to one with phthisis is that he should become tubercular" is still practically repeated in much that is said about a "pretubercular" condition. The discovery of Villemin enabled investigators to demonstrate that the active virus in scrofulous glands, in granulation disease of the joints, in caries of the bones, and in caseous pneumonia is one and the same thing, and that susceptible animals inoculated with matter from any of these sources become tuberculous. With this evidence before him the pathologist repeated his studies from a vantage point and the researches of Schüppel, Buhl, Ziegler, Senftleben, Cohnheim, Baumgarten, Köster, Friedlander, and others in Germany, and of Ranvier, Cornil, Grancher, Charcot, Lépine, Thaon, and others in France, completely demolished the pathology of tuberculosis as taught by Virchow and demonstrated the existence of tubercular lesions in parts of the body once supposed to be free from such invasion, such as the conjunctiva, the cornea, the choroid, the iris, the skin, the muscles, the bones, and the blood vessels. Finally, the discovery by Koch of the specific cause of tuberculosis has given positive proof of the etiological unity of its various manifestations.

The erroneous teachings of Virchow as to the pathology of tuberculosis have lost their force for all except the few who professionally live in the distant past; but the clinical teaching founded upon this false pathology, and as especially exemplified in the writings of Niemeyer, is still a controlling factor in our treatment of this disease. We have been too slow to perceive that our advanced knowledge of the etiology and pathology of this disease has given us just cause for a more hopeful attitude toward it.

In 1882, Baumgarten[1] wrote in sum and substance as follows: "Tuberculosis is in and of itself not so bad a disease. We do not believe that it possesses, as a constant property, 'the considerable local malignancy' which Friedländer believes he must still unconditionally attribute to it. When we see individuals who as children had thickened, tuberculous cervical glands or tuberculous disease of the joints develop into the strongest and handsomest men; when we see people who in childhood had Pott's disease, which is always due to tuberculous caries of the vertebræ, live for years with this deformity, and reach advanced age; with such observations as these so frequently before us, we must conclude that tuberculosis is not so deadly as is usually supposed." . . . "The curability of phthisis pulmonalis was well known to the older pathologists. The distinguished Carswell wrote: 'In no other disease has pathological anatomy furnished more positive evidence of curability than it has for tuberculous disease of the lungs.' Under the dualistic theory, when a case recovered it was said to be one of simple inflammatory nature, and not tuberculous. However, since we know that caseous phthisis is tubercular, we must admit that tuberculosis is curable. The tendency to heal is much more evident in the 'true tuberculosis' of Virchow than it is in his caseous pneumonia. We will, therefore, come much nearer the truth if we take the oft-quoted saying of Niemeyer, 'The greatest misfortune which can happen to one with phthisis is that he should become tubercular,' and make it read as follows: 'The greatest misfortune which can happen to one with pulmonary tuberculosis is that he should become phthisical.'"

Tuberculosis, so long as it remains an unmixed infection, is not a deadly disease, and I believe it to be, in this stage, one of the most easily curable of the bacterial diseases. Except in the forms of acute miliary and meningeal tuberculosis, it is but seldom the direct cause of death. However, as soon as it becomes a mixed infection, and is something more than tuberculosis, it then takes rank as the most fatal of all the diseases now afflicting mankind. In combating this disease, there are two points of attack, and if the wisdom and skill of the profession be directed to these, the death rate from tuberculosis will be much reduced in the near future. The first and most important method of dealing with this disease consists of the application of preventive measures. With these, however, I have at this time nothing to do. The second, the one with which I am now concerned, consists of the treatment of the disease while it remains an unmixed infection. When this is done, tuberculosis will cease to be "the terror of the laity and the cross of the physician." In order to accomplish this work, however, we must put aside certain dogmas, which we have so long mistaken for facts that their shadows frighten us. We must be convinced that as an unmixed infection it is curable. We must be able to recognize the disease while it remains an unmixed infection. We must cease regarding certain conditions as evidence of the existence of an indefinite, imaginary, so-called "pretubercular" state, and must learn to look upon these conditions as proof of the actual existence of tuberculosis. I will now give attention to these points, and in so doing I will consider them quite apart from the claims which I may make for nuclein or any other agent employed for curative purposes.

Is tuberculosis a curable disease? If so, to what extent is it curable? What shall we understand by "the curability of tuberculosis"? Are tubercular deposits ever absorbed? Do such deposits ever wholly disappear and leave no trace of their former existence? May tissues once invaded by the bacillus tuberculosis regain histological continuity? Is there ever a *restitutio ad integrum*?

One-seventh of all men die of tuberculosis and one-third of all men have the disease. The first part of the preceding statement is shown to be true by the mortality statistics of all civilized countries. The second part of the same statement is shown to be true by the records of autopsies in various parts of the world. Massini[1] found evidence of tuberculosis as shown by scars, indurations, cheesy and chalky foci in eighty-nine out of 228 autopsies made upon persons who had died of diseases other than tuberculosis at the Basle Hospital. Müller[2] found in the Munich Pathological Institute that tuberculosis caused 29.4 per cent. of deaths in adults, and 30 per cent. in children, and that 11.8 per cent. more of the children had tuberculosis. Bollinger's[3] researches confirm these statements. Baumgarten[4] states that from one-fourth to one-third of all the bodies sectioned show tubercular lesions. Queyrat[5] found tuberculosis in 31.4 per cent. of the children examined. Lundonzy[6] reports that 30.4 per cent. of the children brought to autopsy are tuberculous. Babes[7] found tubercular deposits in one-half the children dying from all diseases at Bucharest. In 1887 he sectioned

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[1] *Ueber latente Tuberculose*, Volkmann's "Vorträge," No. 218.

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[1] As quoted by Hahn, "Ein Beitrag zu den Fieberverhältnissen bei der Phthise," S. 10.

[2] "Zur Kentniss der Kindertuberkulose." *Münchener Med. Wochenschrift*, 1889.

[3] "Ueber Entstehung und Heilbarkeit der Tuberkulose." *Münch. Med. Wochenschrift*, 1890.

[4] "Ueber latente Tuberkulose," Volkmann's "Beiträge," No. 218.

[5] "Sur la tuberculose infantile," *Progrés Médical*, 1896, p. 335.

[6] "De la frequence de la tuberculose au premier age." *Rèvue de Mêdicine*, 1887, p. 383.

[7] "Recherches sur les associations bacteriennes du bacilli de la tuberculose," *Progrés Méd. Roumain*, 1888.

ninty-three children, sixty-five of whom had tubercular glands. Haitnel[1] claims that one-third of the children examined at *L'hospice des Enfants assistés* show tubercular lesions. Simmonds, Schwer, and Boltz[2] state that autopsies at the Anatomical Institute at Kiel of 781 children, aged from one to five years, showed tubercular lesions in 230; of 228 between five and ten years, 78 were tubercular; of 162 between ten and fifteen years, 56. Wolff[3] states that autopsy reveals either recent or old tubercular lesions in from forty to fifty per cent. of adults and in from sixty to seventy per cent. of children; also that thirty per cent. of adults and forty per cent. of children have latent tuberculosis. Schlenker[4] found in 100 consecutive autopsies at Zurich 66 bodies tubercular; 35 of these had died of tuberculosis; in 4 others the disease was marked, but had not caused death; while in 27 it was latent and had not been suspected during life. In this examination no lesion was pronounced tubercular unless it was evident and characteristic to the unaided eye. He points out the fact that had the indurations been examined microscopically, the percentage of cases of latent tuberculosis would have been increased. According to Adossides[5] of 4815 bodies sectioned at Halle from 1882 to the middle of 1893, 1066 showed gross tubercular lesions.

These and other statistics of like import justify the assertion that about one-third of all men are, at some period of life, infected with tuberculosis. Now, if one-third be infected and one-seventh die of the disease, it must be that the difference between one-third and one-seventh, a little more than one-fifth, are tubercular but do not die of this disease. Of the sixty-three millions of people living in the United States in 1890, nine millions have died or will die of tuberculosis, while twenty-one millions have been, are, or will be infected with the bacillus tuberculosis. Does this not demonstrate that tuberculosis does not possess the malignancy attributed to it?

The fact that one may be infected with tuberculosis and such infection remain localized for many years is shown by the study of cases of lupus. Out of 27 cases of lupus studied by Doutrelepont[6] the infection spread and the patient died of tubercular meningitis in only one instance. Hasland found 6 cases of what he regarded as metastatic involvement of the internal organs in 53 cases of lupus, and Holm[1] observed 11 in 62.

The study of instances of accidental inoculation with the bacillus of tuberculosis in wounds, sometimes known as cadaver (Leichen) tuberculosis tends to similar results. It is true that the infection in these cases may extend to the internal organs, but often the disease remains a local infection and not infrequently a spontaneous cure occurs.

Verneuil[2] reports the case of an assistant who became inoculated at the root of a finger-nail while sectioning a tubercular body. Four or five days later a small point of suppuration appeared. Three years later the finger was amputated at the second phalanx and at the same time a tubercular abscess on the back of the hand was opened. Three years later still a bruise of the stump of the finger was followed by tubercular sequestration. Up to this time the internal organs had remained sound and subsequently the man died of spinal meningitis. Karg[3] reports the case of a physician who developed a wound tubercle on the thumb. For six years this remained without any signs of extension. Then the thumb became swollen and red and several tubercular abscesses developed along the lymphatics. These were opened and the bacillus found in the contents. Riehl[4] states that Dr. Karg inoculated himself in an interdigital fold. Two small tubercles were removed and found to contain bacilli. Kraske[5] observed a boy, who, after a surgical operation became infected from his tuberculous sister. The tuberculous growth was removed and the boy remained well. According to Tscherning[6] a servant inoculated her finger with the broken cuspidor of her tuberculous master. The tubercle at the point of inoculation and some swollen axillary glands were removed and in these the bacilli were found. The servant remained in good health. Lehmann[7] observed ten Jewish children with local tuberculosis after circumcision by a tuberculous rabbi. Three died of marasmus, three of tubercular meningitis, one of intercurrent diphtheria, and three recovered. Many other cases of wound tuberculosis have been reported and a valuable review of the subject has been written by Schmidt.[8] The study of these cases shows that inoculation with the bacillus tuberculosis does not always cause death, and that man is much less susceptible to the disease, when thus acquired, than are rabbits and guinea-pigs.

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[1] "La tuberculose heréditaire et la tuberculose du premier age."

[2] Quoted by Gartner. "Ueber die Erblichkeit der Tuberkulose," Zietschrift für Hygiene. B. 13, S. 132.

[3] *Deutsche Med. Wochenschrift*, 1892.

[4] "Beitäge zur Lehre von menschlichen Tuberculose." Berlin, 1893.

[5] "Ueber den heutigen Stand der Therapie der Peritonis tuberculose," Halle, 1893.

[6] "Meningitis tuberculosa nach Lupus," *Deutsche Med. Wochenschrift*, 1886.

[1] Quoted by Schmidt, "Ein Fall von lokaler Impf-Tuberkulose der Haut."

[2] *Sémaine Médicale*, 1885.

[3] "Tuberkelbacillen in einem sogenanten Leichentuberkel." *Centralblatt für Chirurgie*, B. 12.

[4] "Tuberkelbacillen in Leichentuberkel." *Centralblatt für Chirurgie*, B. 12.

[5] "Ueber tuberkulose Erkrankung von Wunden." *Ibid.*

[6] "Inokulationtuberkulose beim Menschen," *Fortschritte der Medicin*, 1886.

[7] "Ueber einen Modus der Impftuberkulose," *Deutsche Med. Wochenschrift*, 1886.

[8] "Ein Fall von lokaler Tuberkulose der Haut."

Further evidence that one infected with tuberculosis may recover from the disease is furnished in the observation of other forms of local tuberculosis. Tuberculous joints often heal, and the child afflicted in this way may develop into the most robust adult. König[1] says that coxitis may heal at any stage of the disease. Tubercular abscesses may disappear and leave scar tissue as the only evidence of their existence. Tubercular orchitis and tubercular pericarditis have been known to disappear. These evidences of the possibility of the healing of tissue once invaded with tubercles should encourage us, because in all cases tuberculosis begins as a local disease, and the tissue at first involved is only of microscopic extent. The germ is inhaled, and finds lodgment, and begins to multiply somewhere in the lung. The sooner the inoculation is recognized the greater are the chances of so improving the resistance of the tissue that extension of the infecting agent does not occur, and then it dies out or remains localized. I have stated that every case of tuberculosis begins as a local disease. The researches of Buhl and others have shown that this is true even in acute miliary tuberculosis and in tubercular meningitis. In these the systemic infection comes from a pre-existing tubercular focus. Friedlander[2] and others have described quite thoroughly the changes which take place in the spontaneous healing of local tuberculosis.

The evidence that tuberculosis of the peritoneum occasionally undergoes a spontaneous cure and frequently heals after laparotomy is no longer questionable.

Since the publication of the now classical paper by König[3] in 1884, on laparotomy in peritoneal tuberculosis, surgeons in every part of the world have resorted to this operation as a curative agent, with a fair degree of success. These cases have been collected and the results summed up by Phillips,[4] Lauser,[5] and others.

Adossides[6] has tabulated 405 laparotomies for tubercular peritonitis with thirteen per cent. of cures, counting as cured all those who lived two years or longer after operation.

It will be interesting to learn, so far as we are able, the histological changes involved in these cases of cure of tubercular peritonitis after operation. Is there a complete disappearance of the tubercles? Richelot[1] opened the abdominal cavity on account of strangulated hernia in a woman upon whom he had twice before performed laparotomy for tubercular peritonitis. The last operation for tuberculosis had been made one year before that for the hernia. He found the peritoneum perfectly smooth, of normal color, and free from adhesions. Knaggs[2] performed laparotomy for tuberculosis, and five and one-half years later operated on the same woman for hernia. At the second operation there was no trace of tuberculosis detectable, although at first the intestines, mesentery, and parietal peritoneum were thickly covered with tubercles. Clarke[3] reports a case in which an ovariotomy was made eighteen months after a laparotomy for tubercular peritonitis, and the second operation showed that the tubercles had wholly disappeared. Similar cases with similar findings have been reported by Schede, Winiwater, Ahlfeld, Hirschberg, Schmalfuss, Tait, Feldmann, Terillon, Esmarch and Werth (see monograph by Adossides).

These observations demonstrate not only that tubercular peritonitis may be cured by laparotomy, but that the cure may mean a complete *restitutio ad integrum*.

The following experiments bear upon this point: On December 31, 1895, we inoculated three full-grown rabbits intra-abdominally with a pure culture of the bacillus tuberculosis. No. 1 was employed as a control, and received no treatment of any kind. It died May 25, 1896. The peritoneum, omentum, liver, and spleen were tuberculous. There was also a large tubercular abscess in the abdominal wall at the point of inoculation.

No. 2 was placed in the holder January 25, 1896, and the abdominal cavity opened. In the wall at the place of inoculation there was a tubercular induration as large as a nickel. In the mesenteric fold of the colon there was a tubercle as large as a pin-head and many smaller ones. The omentum was filled with small nodules, and the border of the liver was dotted with pin-point tubercles. After noting these facts, the abdomen was closed and nothing more was done to this animal until July 24, 1896, when it was killed. What had been a tubercular induration in the wall was at the autopsy only a lump of yellow fat. No sign of tubercle could be found in it. The liver was perfectly sound. There were heavy deposits of fat of a deep yellow color in the omentum and mesentery, and in these the tubercles observed at the time of the laparotomy were found. These nodules had not increased in size, but they contained a caseous center in which tubercle bacilli, which stained normally, were found.

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[1] *Specialle Chirurgie*, B. 3, S. 445.

[2] "Ueber locale Tuberkulose," Volkmann's *Vorträge* No. 64.

[3] *Centralblatt für Chirurgie*, 1884.

[4] Die Resultate operation Behandlung der Bauchfell tuberkulose. *Gekrönte Preisschrift*, Göttingen, 1890.

[5] Ueber Tuberkulose-Peritonitis und ihre Behandlung durch Laparotomie. Regensburg, 1893.

[6] "Ueber den heutigen Stand der Therapie der Peritonitis tuberculosa," Halle, 1893.

[1] *Revue de Chirurgie*, 1893.

[2] *Lancet*, November 11, 1892.

[3] *Ibid.*

No. 3 had its abdominal cavity opened January 25, 1896. There was an induration in the wall at the point of inoculation similar in size and appearance to that observed in No. 2. The mesentery and omentum were filled with nodules the size of flaxseed and the border of the liver dotted with fine tubercles. One nodule was cut from the omentum and examined for bacilli, which were abundantly present. The abdomen was closed, and 45 c.c. of a one-half per cent. solution of nucleinic acid was injected into the jugular vein. Nothing further was done to this animal until July 24, 1896, when it was killed. Not the slightest evidence of tubercle could be found anywhere. The induration in the wall had wholly disappeared and the mesentery and omentum were perfectly smooth. The deposits of yellowish fat observed in No. 2 were not found.

The following details will show that the skin and muscles may also regain histological continuity after tubercular invasion. November 18, 1895, two rabbits, which may be designated as A and B, were inoculated intra-abdominally with tuberculous sputum. The weight of A was 1552 and that of B 1402 grams. On December 6, 1895, A died. There was a caseous infiltration extending for one and one-half inches longitudinally and one-fourth inch transversely under the skin of the abdomen. The muscles of the abdomen were infiltrated with a creamy, semi-solid exudate, in which the diplococcus pneumoniæ, in great numbers, and the bacillus tuberculosis, in small numbers, were found. There was some effusion in the peritoneal cavity, and in this also both the above-mentioned germs were present. Death was due to the septicemia induced by the diplococcus. At this time B showed a suppurating sore two inches in length and one-fourth inch broad on the abdomen, and a round ulcer three-fourths of an inch in diameter and extending deep into the muscles on the right thigh. Tubercle bacilli were repeatedly found in the pus from each of these sores. December 6, 1895, 50 c.c. of a one per cent. solution of nucleinic acid was injected into the jugular vein and the next day 15 c.c. more was injected into the vein of the ear. On December 7 B weighed 1394 grams, on December 14, 1480, and on December 21, 1592. On December 27, B was found to be losing in weight, falling to 1542 grams. At this time the sore on the abdomen had healed over, but a nodule had appeared at the point of inoculation and had grown to the size of a filbert. The sore on the hip was still discharging, although it had decreased very much in size. On December 27, 1895, B received hypodermically about the nodule on the abdomen 30 c.c. of the one per cent. solution, and two days later 40 c.c. more. After this B received no further treatment, but continued to grow fat and strong. On July 23, 1896, B was killed; weight at that time was 2030 grams. There was some adhesion of the skin to the muscles over the abdomen where the sore had been, but nothing more. The hard nodules had wholly disappeared. All internal organs were in perfectly normal condition. The ulcer on the hip had wholly disappeared and there had been complete reconstruction of the injured tissues. There was not even a scar to mark the place of the former lesion.

I have brought forward these observations on the rabbits at this time not for the purpose of making any claims for nuclein, but in order to show that there may be a *restitutio ad integrum* in tissue after tubercular invasion. For my present purpose it matters not what be the nature of the agent that brings about the restitution.

Many theories have been advanced to explain the curative effect of laparotomy on tubercular peritonitis. It has been attributed to the influence of the light, which reaches the peritoneum during the operation (Lauenstein), to the entrance of air (Mosetig-Moorof), to mechanical irritation and the presence of air (Caspersohn), to the bacterium termo, which is supposed to enter the cavity with the air (Cantani), to a digestive action of the peritoneum, that is assumed to be called into action by ths operation (Sänger), to a suction action, "aufsaugende kraft" of the peritoneum, due to the relief of pressure (Fritsch), to the oxygen of the air (Braatz), to improved resorption (Lindner), to inflammatory adhesions (König, Breisky, Hartman, and Aldibert), to a connective tissue reaction (Phillips), to improved circulatory and respirating action, and to relief of the autointoxication (Vierordt), and to the use of disinfectants used in the operation and sometimes in washing out the cavity (Preindlsberger and Ceccherelli). However, the explanation suggested by Kischenski[1] that the cure is due to the leucocytosis which follows the operation is the most reasonable. Adossides accepts this explanation and sensibly adds that the action of the leucocytes is favored by (1) the relatively small number of bacilli present, and (2) the great extent of the peritoneal membrane and its great vascularity.

Tubercular peritonitis has been cured not only by surgical means, but under medicinal treatment also. Such cases have been reported by Bouilard, Vierordt, Anderson, Comby, Fagge, and others.

Cases of tubercular meningitis terminating in recovery have been reported, but from the nature of the disease it is difficult to furnish positive evidence to this effect. However, such able diagnosticians as Rilliet and Trosseau have reported cures. I have carefully studied the monograph by Zwicke[1] on this subject, and must conclude that he does not supply convincing proof of the correctness of his diagnosis in the case of cure reported by himself.

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[1] *Centralblatt für Chirurgie*, 1893.

The researches of Orth,[2] Fraenkel,[3] and Prognbinsky[4] have demonstrated that tuberculosis may be located primarily and exclusively in the larynx, and Schmidt[5] claims to have cured five cases of this disease by tracheotomy. He attributes the curative action to the rest given the larynx and to the more direct action of the oxygen of the air. Glöckner[6] has reported two cases treated by tracheotomy without benefit, but in both of these the lungs were extensively involved and the ulceration of the larynx was probably secondary; certainly the disease was not confined to the larynx. Krause[7] has claimed success in the treatment of laryngeal tuberculosis by his method, with lactic acid, and his observations have been confirmed by von Schroetter,[8] Keimer,[9] Heryny,[10] Jellinick,[11] and others. Like good results are claimed for iodoform by Beschorner,[12] Schultzer,[13] and others.

In regard to the cure of pulmonary tuberculosis, either spontaneously or under climatic or medicinal treatment, there is much information to be found in medical literature, but it can not be so positive as that given concerning peritoneal tuberculosis. If there be histological restoration there can be no evidence after death of the existence of the disease during life. Scars and chalky deposits are frequently observed, and the fact that these contain tubercle bacilli demonstrates the former existence of the disease in an active form. Carswell[14] states, as has already been quoted, "that pathological anatomy has probably not given such positive proof of the curability of any other disease as it has of phthisis." Weber[15] says: "It seems to me impossible for any one acquainted with the literature of the subject to doubt the curability of phthisis." Rühle[1] asserts that tuberculous processes in the lungs may heal.

Green[2] says: "It lies in the very nature of the case that there can be no absolute cure, no *restitutio ad integrum*, and the very best that can happen is the formation of a scar or of a chalky deposit."

"One frequently has the opportunity of seeing these healed foci in various stages; sometimes as scars, again as connective tissue nodules, or as cavities filled with chalky concretions. The size of these cavities varies from that of a hemp seed to that of a hazelnut. Generally the remainder of the lung is in a normal condition. These healed places are generally found in the apices, where tuberculosis most frequently begins. They lie near the surface; the apex is more or less contracted; the pleura pulmonalis is thickened and more or less adherent to the pleura costalis. To the finger these points feel like hard lumps. The interior of the nodule consists of a well encapsuled mass of variable consistency depending upon the length of continuance of the healing process. The center is hard, generally calcified, while the periphery is softer, incompletely calcified."

Green has examined a number of these healed cavities microscopically and in some the bacilli were detected, while in others the result was negative. Dejerine[3] has made a similar study with like results. He also inoculated guinea-pigs with the wholly calcified material and failed to induce tuberculosis. Kurlow[4] obtained the following results from his inoculations:

1. Using scar nodules in which no bacilli could be found; two inoculations; both negative.

2. Using completely calcified nodules in which no bacilli could be found; four inoculations; all negative.

3. With caseo-chalky nodules about which no tubercles could be found. In many of these nodules no bacilli could be detected; twelve inoculations; all the animals became tuberculous.

4. With caseo-chalky material about which tubercles were found; seven inoculations with positive results in all.

Nauwerk,[5] Demme,[6] and others, have given the clinical histories of cases of recovery from pulmonary tuberculosis with death from some other disease and the findings at autopsy.

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[1] "Beitrag zur Heilung der Meningitis basilaris tuberculosa," Bonn, 1868.

[2] "Lerhbuch der Patholog. Anatomie."

[3] Primare Kehlhopftuberkulose. *Deutsche Med. Wochenschrift*, 1883, S. 490.

[4] *Medycyna*, 1887.

[5] *Deutsche Med. Wochenschrift*, 1885 and 1886.

[6] "Ein Beitrag zur Behandlung der Laryngo-Phthisis tuberculosa," 1890.

[7] "Milchsaure gegen Larynxtuberkulose," *Berlin Med. Wochenschrift*, 1885, and *Deutsche Med. Wochen.*, 1886.

[8] "Verlosungen über die Krankheiten des Kehlkopfe."

[9] "Ueber Kehlkopftuberculose, ihre Behandlung und Heilung." *Deutsche Med. Wochenschrift*, 1886.

[10] *Deutsche Med. Wochenschrift*, 1886.

[11] "Ueber Milchsaurebehandlung im Kehlkopf, Rachen und der Nasse, Centralblatt für die gesamte Therapie."

[12] "Die localer Behandlung der Laryngo-Phthiso-tuberculosa," Dresden, 1888.

[13] Ueber Diagnose und Heilbarkeit der Kehlkopfschwindsucht unter dem Einflusse des Iodoforms. *Wiener Med. Presse*, 1882.

[14] *Pathological Anatomy*, London, 1838.

[15] "Lectures on the Hygienic and Climatic Treatment of Chronic Pulmonary Phthisis" (German edition), Leipzig, 1888.

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[1] Ziemssen's *Handbuch*.

[2] *Ueber Tuberkelbacillen in alten ausgeheilten Lungenherden*, Berlin, 1889.

[3] Recherche des bacilles dans la tuberculose calcifiée et caseo-calcifiée, *Revue de Médicine*, 1884.

[4] Ueber die Heilbarkeit der Lungentuberkulose, *Deutsches Archiv. für klin. Med.*, B. 44.

[5] "En Fall von geheilter Lungentuberkulose," *Deutsche Med. Wochenschrift*, 1883.

[6] "Jahresbericht über die Thatigkeit des Jennerschen Kinderhospital in Bern," 1884.

Wolff and Saugmann[1] have given us valuable information concerning the possible cure of pulmonary tuberculosis. In 1862 Brehmer began the treatment of tuberculosis in his hospital at Görbersdorf. In 1890 Wolff and Saugmann sought out many of the earlier cases treated by Brehmer, and reported upon their condition. The number found and studied was 142. In some of these the evidence of the previous existence of the disease and its arrest cannot be doubted. One of these is reported as follows: In 1876, a woman entered Brehmer's hospital with infiltration of the right lung to the third rib, and a less marked infiltration over the same area of the left lung. She had fever and night sweats, and was reduced in flesh. She remained in the institution thirteen months, and was dismissed "cured." Fourteen years later she was operated upon for myomata uteri and died. A few days before death her lungs were carefully examined, and the only evidence of disease that could be found was a slight prolongation of the expiratory sound over the upper right lung. Section showed a cicatricial contraction, with a circumference of about 4 cm. in the right apex; otherwise no abnormality could be found in the lungs and no tuberculosis in any part of the body. In microscopical sections of the scar tissue tubercle bacilli, which stained well, were found. The authors are certainly justified in the conclusion drawn from the case. Considering the severity of the case when it came under treatment, fourteen years before, the cure must be regarded as ideal, but, nevertheless, it was not absolute, because the bacilli remained and, as indicated by the tinctorial reaction, retained their vitality, and in this respect the patient showed a condition no more serious than that exhibited by "one-half, or at least one-third, the bodies that reach the autopsy table."

These authors conclude that at least eight per cent. of those treated at Görbersdorf from 1862 to 1891 were permanently cured.

I have gone into the question of the curability of tuberculosis thus specifically (and I might say that the evidence on each point might be confirmed more fully did space and time permit) because I believe that the present attitude of the profession in general toward this disease is radically wrong and harmful. I believe that I am right in saying that the average physician does not strive to recognize this disease as early as is possible, but that he wilfully disregards all evidence of its existence until, in the majority of instances, it is altogether too late. I shall have something to say concerning the means of an early diagnosis in another part of this paper.

I will now proceed to state the results obtained in the treatment of tuberculosis with yeast nucleinic acid. In doing this I will make the reports of cases as short as is possible, and at the same time consistent with clearness. In order to avoid repetition, I may state here that in all of the seventy-five cases reported the tubercle bacilli were found; and in all of the urinary cases guinea-pigs were inoculated and tuberculosis developed, in order to be certain that I had not mistaken the smegma bacillus for that of tuberculosis. No case is reported in this list which first came under observation later than December, 1895.

(To be continued.)

CLINICAL MEMORANDA.

A CASE OF INTRAUTERINE HYDROCEPHALUS OF UNUSUAL SIZE; EVACUATION OF THE FLUID THROUGH THE SPINAL CANAL, FOLLOWED BY EASY DELIVERY OF THE HEAD.

BY IRA G. STONE, M.D.,
OF MEAD, NEB.

ON the morning of December 30, 1895, I was called in consultation to see a case of difficult labor. Arriving at 5.30 o'clock, I obtained the following history: Mrs. D., of Irish extraction, rather under medium size, with small bones, but pelvis of fair capacity. Two normal confinements preceded the present one. At this confinement she was taken in labor on the evening of December 29th, after a normal gestation, and at 2 o'clock on the morning of December 30th a breech delivery of the fetal body occurred, but the head could not be induced to descend. On examination, I found the fetus to be of rather small size, poorly nourished, and with contractions of both lower extremities (double talipes equino varus). The arms were delivered, but the shoulders remained well up in the lower vaginal tract, the right resting under the pubes and the left low down in the sacral concavity. In this condition the patient had remained from 2 to 5.30 o'clock, A.M. By making strong traction on the fetal body, I succeeded in stretching the neck sufficiently to bring the shoulders down so that an examination with the finger, though difficult, could be made up to the base of the skull. By withdrawing and reinserting the finger at various points, I finally succeeded in carrying the examination sufficiently far to satisfy myself that the retention was due to an enlargement of the fetal head.

On examining the surface of the abdomen of the patient, the uterus was found to extend about two inches above the umbilicus, and to be filled with a semi-solid substance, in which nothing definite could be outlined. Its contour was nearly round, and pressure at all points over the uterine surface yielded the same degree of resistance, with no well defined hard points or projections.

The necessity of relieving the woman at the earliest possible moment was imperative, as the expulsive efforts on the part of the uterus had become very feeble, and her condition was that of extreme exhaustion. Of the several methods adopted for tapping the fluid contained in the head, I chose the one suggested by Van Huevel, and first performed by Tarnier in 1876—that is, by reaching the accumulated fluid by way of the spinal canal. My reasons for adopting this method were based on the following facts: (1) Owing to the large size of the fetal head, it could not be brought low enough in the pelvic cavity to be easily reached alongside the neck. (2) To reach the base of the skull between the vaginal walls and the side of the trunk and neck of the child, which crowded the vagina to its utmost capacity, would have been very difficult, to say the least. (3) The danger of wounding the maternal tissues with either a cutting or perforating instrument, and the subsequent possibility of the absorption of septic material, was to be considered as of no small consequence. (4) The absence of the proper instruments, which is so common to the practitioner in remote districts.

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[1] "Ueber Dauerende Heilung der Lungentuberkulose," Wiesbaden, 1891.

On the other hand, the advantages of tapping through the spinal canal, in this case at least, were: (1) The ease with which the fluid could be reached through this hollow tube, protected as it is on every side by the hard resisting walls formed by the vertebræ. (2) The absolute safety to the maternal tissues, they not coming in contact with cutting or perforating instruments. (3) The few and every-day instruments required to do the operation, and (4) because the operation could be performed directly under the supervision of the operator's eye.

After deciding, for the above reasons, to reach the fluid through the spinal canal, I proceeded as follows: Placing the woman in an easy position, with the fetal back well exposed and easily accessible, I made a transverse incision, about two inches long, across the spinal column of the child, as near the external parts of the mother as convenient. This incision was carried down between the spinous processes, and was located below the center of the scapula. Then an incision was made parallel with the spinal column, and of about the same length as the first, directly over the ends of the spinous processes, and carried downward. After making the incision, the flaps were turned back on each side down to the spinal column, and then the posterior segment of one of the dorsal vertebra was removed to facilitate the entrance of the catheter. Having with me only a soft rubber catheter, I found it too flexible to force its way through the canal, so withdrew it and placed the end of a uterine sound through its eye, and had no difficulty in passing it on into the fetal head, and as soon as the catheter entered the head a flow of almost transparent fluid occurred, and continued until sixty-four ounces had been drained off. About this time uterine contractions became stronger, and by moderate traction on the fetal trunk, aided by suprapubic pressure, the head was delivered, still containing a considerable quantity of fluid that had not passed off through the catheter. The fluid had a specific gravity of 1006 at the body temperature, and well-marked alkalin reaction. The placenta was delivered in due time, and the patient made an uneventful recovery.

In reporting this case, I have two objects in view. The first is to point out the advantage of entering the cranial cavity by the way of the spinal canal over that of tapping through some point at the base of the skull, gaining access thereto by way of the vagina. The second point which I wish to bring out does not necessarily belong in this report, yet I wish to present it, from the fact that the condition was present in this case, and, taken into consideration with other evidence, aided me in making a diagnosis of intrauterine hydrocephalus. The proposition is that congenital contractures of the extremities are due to an intrauterine irritation located somewhere in the cerebrospinal tract.

A CASE OF EARLY CEREBRAL SYPHILIS.[1]

By DOUGLASS W. MONTGOMERY, M.D.,
OF SAN FRANCISCO, CAL.;
PROFESSOR OF DISEASES OF THE SKIN, MEDICAL DEPARTMENT OF THE UNIVERSITY OF CALIFORNIA.

THE idea used to be prevalent that the syphilitic virus first expends its energy on the skin and mucous membranes, and that the deep internal organs are not affected until far later in the course of the disease. This is notably not the case, however, as far as the brain is concerned, and now cerebral symptoms are among the well recognized phenomena of early secondary syphilis. The following case is illustrative of this proposition:

On November 24, 1891, Dr. Louis Bazet sent me a patient, twenty-two years of age, who had a discrete papular eruption with excoriated tops on the face and scalp, a lenticular papular rash on the lower limbs, tenderness and induration of the left epitrochlear lymphatic gland, and tenderness over the situation of the right, enlargement of the posterior cervical lymphatics, sore throat, tenderness on deep pressure over the sternum, and a sallow complexion. Dr. Bazet informed me that the patient had left the Eastern States the month before to come to San Francisco, and that a sore had developed on the foreskin during the journey, which the patient had repeatedly cauterized with nitrate of silver. He evidently belonged to that class, the *jeunesse argentée*, who know altogether too much about the use of nitrate of silver.

When he came under Dr. Bazet's care, about November 1, 1891, he was in a bad condition. The temperature had run up to 103° F., the sore on the foreskin necessitated circumcision, and several inflamed and suppurating buboes had to be enucleated from each groin. The unfortunate course of the disease up to this point may have been due to the irritation caused by the previously-mentioned repeated and insufficient self-inflicted cauterizations. There being no doubt that he was suffering from syphilis, a corrosive sublimate lotion was prescribed for the rash on the face and scalp, and protiodid of mercury pills were given internally.

I did not see the patient again until about nine months later, in September, 1892, when he called on me at Dr. Bazet's instance, complaining of severe pain in the occiput. The epitrochlear and posterior cervical glands were no longer demonstrable, and the rash had disappeared, but the patient was anemic. The urine was alkalin, but otherwise normal. In the intervening time he had been undergoing treatment faithfully, but his habits with regard to being out at night, smoking cigarettes, etc., had remained irregular. He was working in a badly ventilated office, but not by any means too hard. The headache was ascribed to the anemia, and the anemia to the irregular habits, the confinement in the office, and possibly also to the mercurials which he had been taking. The cessation of specific treatment, the taking of the elixir of iron, quinin, and strychnin, and a holiday, were advised.

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[1] Read before the San Francisco County Medical Society, December 8, 1896.

He went to Monterey, and complained bitterly while there of what he thought were piles, but which were afterward found to be condylomata. In a short time he returned to San Francisco, still suffering from severe headache. While walking under a hot sun he suddenly complained of an intense pain in the head, and, a few days afterward, after being again exposed, it was noticed that his face flushed in a peculiar way. On the afternoon of the following day he had a "fit," tonic and clonic, with biting of the tongue and loss of consciousness, and during its progress attempted to jump out of a window. When seen about an hour after the attack he was sitting on a sofa, dazed and restless. His heart was beating rapidly, his pupils were equal, there was no paralysis, and his tongue protruded straight. This was on October 5, 1892, a little over one year after the sore was acquired.

The important question now before us was whether we should consider the epileptic seizure as a symptom of syphilis, for, in this case it required energetic antisyphilitic treatment. Viewing it from the standpoint of epilepsy alone, it is doubtful if it would have been right to ascribe it to the specific disease. Idiopathic epilepsy commences early in life, and this man was only about twenty-three years of age. If it had occurred for the first time later in life the intrinsic evidence of the convulsion being a symptom of syphilis would have been much stronger. Fournier has said that when epilepsy first appears at from thirty to thirty-five and forty years of age, in the very large majority of cases it is syphilitic. Seligmüller places the age much younger, and asserts that when an epilepsy commences in an apparently healthy individual past twenty years of age it is decidedly indicative of the presence of constitutional syphilis. This point of the intrinsic value as a symptom of syphilis of an epilepsy that commences in adult life is not by any means settled, however, and Mendel has expressed himself as at any rate against any such extreme view as that of Seligmüller.[1]

Viewing the convulsion in the light of all the facts, however, we were fully justified in taking this to be an epilepsy due to syphilis. It is now well known that although well-marked cases of syphilis of the brain cannot be said to be of frequent occurrence, when one takes into account the vast number of people suffering from this disease, yet, when cerebral syphilis does occur, it comes on far more frequently in the early than in the late course of the disease. Lang recently quoted a list of 168 cases of cerebral syphilis collected by Charles Mauriac, of which seventy-two, or 42 6-7 per cent. began during the first two years of the disease.[1] Furthermore, cerebral syphilis frequently first manifests itself by a prolonged and severe headache, followed by an epileptic seizure. We, therefore, had a young man in the early secondary stage of syphilis, with condylomata of the anus, suffering for the first time in his life from an epileptic fit, which had been preceded by a severe prolonged headache. The predisposition to this manifestation of syphilis brought on by the patient's habits ought also to be taken into account here, for the localization of the disease in the nervous centers, and especially in the brain, occurs chiefly in two classes of individuals—those who are fagged by mental work and worry, and those who are jaded with pleasure,[2] and he belonged to the latter class.

The evidence, therefore, was overwhelmingly in favor of the affection being syphilitic, with very few chances that it was not. He was immediately put on inunctions of mercurial ointment, and iodid of potash was administered internally. There was constant pain and tenderness of the crown of the head after the epileptic seizure, and this and the condylomata around the anus were the only symptoms the patient complained of. He was drowsy and taciturn, and his face had a mask-like appearance. He soon developed a decided fetor of the breath from the mercury, although every precaution was taken to keep his mouth clean. The inunctions were then stopped, the iodid of potash was increased up to forty-five grains a day, and Zittmann's decoction and cascara sagrada were also given to combat an obstinate constipation, which had come on after the epileptic attack, and which lasted till the severer nervous symptoms disappeared.

From November 3d to November 7th he had a slight rise of temperature of from a degree to a degree and a half every afternoon. Also, about this time, a paresis of the right side of the face, and then of the right upper and lower extremities, developed, but so slowly as to make it impossible to exactly fix the date of its supervention. No loss of sensation of any kind, either of pain, touch, temperature, or locality could be made out, but these observations were not exact, because of the patient's still stupid condition. He had no ataxia nor loss of patellar tendon reflex. He could not whistle, but he could always pronounce the labials well. He became decidedly aphasic, and very irritable when he could not remember names. He also became hypersensitive to both light and sound, and the barking of a neighbor's dog bothered him a great deal. The photophobia and the irritability of the auditory nerves seemed to be bilateral. These were the only ocular or auditory symptoms observed. About the middle of November, under the continued use of iodid of potash, 180 grains a day, he became much brighter, and the irritability to light and sound became noticeably less. The paresis of the right side of the face and of the right arm still continued, and the right thumb lay in the palm of the hand. One night toward the end of the month he wetted the bed, but we were inclined to consider this an accident rather than a symptom. During the next few weeks he improved steadily, both in regard to the paresis and the general symptoms, and about January 1, 1892, he felt well enough to take a trip to the southern part of the State. He still continued the iodid of potash in full doses, however, up to the middle of January. He then gave up taking medicine, and resumed the use of cigarettes, coffee, etc.

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[1] *Deut. Med. Wochensch*, November 9, 1893.

[1] *Vorlesungen über Pathologie und Therapie der Syphilis*, von Prof. Dr. Edward Lang, p. 518.

[2] Fournier, *Traitement de la Syphilis*, p. 99.

The fact that the brain symptoms began first with prolonged headache, followed by an epileptic attack and a subsequent hemiplegia, and that the onset of this hemiplegia was so insidious that the date of it could not be determined, and also that the paralysis, although distinct, was not at all profound, as well as the great variety of the nervous symptoms all corresponded with what is known to take place in syphilis of the brain. In all probability it was a syphilitic endarteritis of the left Sylvian artery, which narrowed the caliber of the blood vessel so that it did not carry sufficient blood to the left motor area. At first it gave rise to a headache from irregularity of circulation in the meninges, then epilepsy, and finally paresis throughout its wide area of distribution. It did not give rise to complete blocking and thrombosis of the vessel.

When the patient came back to San Francisco, after being away a month, he walked with a firm step, talked with precision and with his usual speed, and could write well. He went back to business immediately, but found he could not add figures as quickly as before; this was the only difficulty under which he labored. In a few days he called on me again, complaining of a severe "cold," and of muscular rheumatism in the right shoulder. Exactly two weeks after his return he was again confined to bed, suffering from coarse and fine tremors of both upper and lower extremities, and of the tongue. The most marked tremors were those of the hands. At first he was not able to write at all; two days later he could do so, but badly. The right arm was still not as strong as the left, and he said that it had never fully recovered from the first attack. He could not detect any difference in strength between his lower extremities. It was difficult to say if the face had returned to the normal as regards the paresis. We thought it had, for a drawing of the mouth to the left when he laughed was probably an inherited facial peculiarity and not a symptom. The sensations and reflexes were normal. His mind appeared to be clear, and his speech, except for some slight thickness in articulation, was normal. He said he had caught cold from sitting with his back to an open window. These tremors were not from mercury, as he had not been taking that drug for a long time. He was again put on iodid of potash, and went south, stopping a short time for treatment at Arkansas Hot Springs, and from there returned to the East.

I again saw the patient for a few minutes on the street on May 23, 1894, that is, over nineteen months after the epileptic attack. He had not done any work since his last illness, but had quietly settled down on the mother lode, and appeared to be working his claim quite successfully. He had just returned from the Eastern States, and was on his way to buy his ticket back again. He shortly afterward went to Paris for no known reason. This aimless wandering is a noticeable feature in some cerebral affections attributed to syphilis, and may have been a symptom of continued irritability of the brain in this case.[1]

The patient was married December 5, 1895, and his wife had a spontaneous miscarriage in May, 1896, at the second month of pregnancy. This was a very suspicious circumstance, in view of the fact that miscarriage is such a well recognized symptom of syphilis. It will be noticed that this miscarriage took place four and one-half years after the appearance of the man's primary lesion, and that during that time he had undergone a rigorous and prolonged course of treatment under Dr. Bazet and myself, another at Arkansas Hot Springs, where they have the reputation of not sparing medicine, and still another under a well-known specialist at the East.

HOSPITAL REPORT.

RESULTS OF FIVE MONTHS' TREATMENT OF DIPHTHERIA WITH ANTITOXIN AT THE NEW YORK FOUNDLING ASYLUM.

By J. LEWIS SMITH, M.D.,
OF NEW YORK;
VISITING PHYSICIAN TO THE ASYLUM.

The New York Foundling Asylum furnishes unusual facilities for observing diphtheria and the effect of its treatment. The number of infants cared for is necessarily much larger than can be accommodated in the wards, and a considerable number are therefore farmed out in tenement houses, and if they are taken sick are returned to the asylum.

The present house physician, Dr. J. D. Voorhees, has furnished the following table, showing the number of cases of diphtheria, and of deaths therefrom, occurring in the asylum during each of the seven years ending with December 1st:

Years.	1890	1891	1892	1893	1894	1895	1896
Cases.	71	67	60	123	133	94	147
Deaths.	36	35	23	34	32	43	18

During the five months ending December 1, 1896, the effect of the antitoxin treatment was carefully observed by the visiting physicians and house staff, with such attention to details as would be likely to increase the efficacy of the serum therapy. It was soon found that the injurious or negative results of the antitoxin treatment in the asylum during the first year of its use had been due to causes which might be avoided. The serum first used was prepared by a French company, in much too brief a period and without the proper testing, and of course proved unsatisfactory. The serum obtained from the New York Board of Health was found to be pure, efficacious, and in every way satisfactory. It is now used in the asylum to the exclusion of all other serums, and those who have witnessed its effects have often been

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[4] See instances of aimless wandering in general paralysis of the insane given by Ch. Berger, *Arch. clin. de Bordeaux*, IV. I, p. 25; 1895.

astonished, that a disease ordinarily so fatal, and the initial symptoms of which appeared often to indicate a severe type of the malady, became so mild in twenty-four hours after the first injection.

It will aid in the investigation of the therapeutic value of diphtheria antitoxin to recall to mind the nature of the disease. The theory has long been accepted that it is produced by a bacillus which does not enter the general system, but generates a toxin which is readily absorbed and acts as a speedy and deadly poison. The virulence of this toxin is the cause of death except in those cases in which a pseudo-membrane clogs the air-passages. It is believed by the advocates of the antitoxin treatment that the immunity which antitoxin produces checks further exudation, causes the exudate to shrivel and peel off, and arrests the further progress of the disease. Obviously, therefore, in order to be most effectual the antitoxin should be used as early as possible on the first day of the appearance of symptoms. The following have been the approximate quantities used in the asylum for the first injection, and it has been only in exceptional cases that a second was required on the following day: From six to eighteen months, 750 units; from eighteen months to three years, 1000 to 2500 units; above three years, 2000 to 2500 units.

The following table gives the number of cases treated and the result, during the five months ending with December 1, 1896. Bacteriologic and microscopic examination of every case was made by the resident physician, and independently by the Bacteriological Department of the Board of Health. The Klebs-Löffler bacillus was found in every instance:

	Total Cases.	Died.
July	10	1
August	6	0
September	5	0
October	19	1
November	25	1

The fatal case in July was that of an infant of seven months, admitted in a nearly dying state. It had double pneumonia, and a diphtheritic exudate extending from the tip of the nose nearly to the lungs. Slight as was the chance of benefiting the patient, 750 units of antitoxin was injected, but without any appreciable effect in staying the fatal result. The fatal case occurring in October was that of a female bottle-fed child having enterocolitis of three weeks' duration. She was entrusted to a family in a tenement house September 15, 1896, but remained in a weak and wasted state, and was returned to the asylum October 16th, when she was found to have gangrenous inflammation of the throat, uvula, and tonsils. Her extremities were cool, a bed sore had appeared in the sacral region, her temperature was 101° F., and a culture showed the presence of the Klebs-Löffler bacillus. Without any expectation of benefit, since the infant was nearly moribund, an injection of 1500 units of antitoxin was given, but without effect, death taking place two days later.

The following is the history of the fatal case occurring in November: Mary X., eight months old, was born in the maternity service of the asylum. She was wet-nursed by her mother, and apparently received sufficient breast-milk. The record of November 1st stated that she was pallid, in poor general health, and had had a cough with some acceleration of respiration for three or four days. The temperature was 104.5° F. In the upper lobes of both lungs were heard the râles of pneumonia. On November 5th, dulness on percussion was distinct over the lower two-thirds of the right lung. The pulmonary signs continued, although with apparently some abatement, and on November 12th the temperature was nearly normal. The breath was offensive, but there was no nasal discharge. On November 15th and 16th, two small white points were observed on the uvula, and a culture from them demonstrated the presence of the Klebs-Löffler bacillus. One thousand units of antitoxin was injected. At this time the temperature was 101°F., and both sides of the neck exhibited swollen glands. Death occurred on the following day. At the autopsy the right pleural cavity was found to contain three ounces of thick encapsulated pus lying over the liver and compressing the right lower pulmonary lobe. The right upper and middle lobes also contained small encapsulated collections of pus. Broncho-pneumonia was present in the left lower lobe, and the cervical, axillary, and bronchial glands had become hyperplastic. The other organs exhibited no notable change, apart from the emaciation.

It is seen that these three patients were sick, with little prospect of recovery, before the commencement of diphtheria. Of the 65 diphtheritic cases embraced in the statistics of the five months, 12 had symptoms of croup, either in its incipiency or more or less developed. Nine of these recovered under the antitoxin treatment without intubation, while the remaining 3 required intubation only as an auxiliary measure. In these nine cases the croup was apparently checked by the action of the antitoxin. One of the three patients had the following unusual but not unique history, which shows that notwithstanding the efficacy of the serum treatment and the power which it exerts in arresting croup, intubation is sometimes necessary as an adjuvant: Joseph, aged three years, with a pseudo-membrane over each tonsil, began to have embarrassment of respiration and the characteristic harsh cough of croup on November 13th. Antitoxin (2000 units) was at once given. On November 14th, the antitoxic injection not having given relief, the child was intubated and 1500 additional units injected. On November 16th, the tube was removed so as to test the respiration, but the dyspnea necessitated its immediate replacement. The lividity and dyspnea occurred each time the tube was removed during the next three weeks. It was taken out six times, the lime salts, membranous *débris*, and mucopus removed, and then it was immediately reintroduced. After the third week it was no longer needed.

The effect of the antitoxin when the diphtheritic exudation is located in unusual situations is interesting and instructive, as showing its potency and far-reaching influence. Thus, on August 18, 1896, W. M., aged four months, was presented for treatment, his right eye being badly inflamed and both lids swollen. The diagnosis of purulent conjunctivitis was made. A pseudo-membrane covered the under surface of both eyelids, but the examination of the corneæ was negative. The Klebs-Löffler bacillus was found in the secretions. A drop of atropin was applied to the right eye morning and evening, a compress wetted in a saturated solution of boric acid was constantly applied over the lids, and an injection of 750 units of antitoxin was given in the connective tissue. The eye was clearing rapidly by October 22d, and recovery was soon complete. In two other cases the same quick recovery occurred, one being in a patient upon whom circumcision had been performed, the inflamed surface being covered with a diphtheritic exudate, and the other in a patient having a vaginal ulceration. In both wounds the Klebs-Löffler bacillus was found, and one injection of the antitoxin sufficed to effect a cure.

Delafield and Prudden, in the fourth edition of their treatise on "Pathological Anatomy" (page 149), say: "There is a considerable number of very important inflammatory lesions, closely allied in their character, and commonly, though not always, associated with suppuration which are due to the presence and growth in the body of the spheroidal bacteria or cocci known as staphylococcus pyogenes and streptococcus pyogenes." These forms of cocci, associated with the Klebs-Löffler bacilli, have been present in a majority of cases of diphtheria which I have examined in the Foundling Asylum, and I think that members of the medical staff who have made a greater number of microscopic examinations than myself, have observed the same frequency, or even preponderance, of the cocci, the infection thus being a mixed one. In some cases the diphtheria bacillus occurred alone. The presence of these cocci doubtless aggravates the diphtheritic process unless the latter can be checked in the beginning, before the inflammation produced by the Klebs-Löffler bacillus becomes fully established. Hence, physicians of the Foundling Asylum employ from the first, in order to destroy cocci upon the nasal and pharyngeal surfaces, such applications as a saturated solution of boric acid, or one of the combinations given in the MEDICAL NEWS for August 29, 1896.

Amid all the changes which have occurred in the therapeutics of diphtheria during the last fifty years, the tincture of the chlorid of iron has continued in common use as a tonic and astringent. Recently the syrup of pineapple has been used as an eligible vehicle for the iron in the following formula:

℞—Tinct. ferri chlorid, ... ʒ ii
Syr. ananassæ sativæ . . . . ℥ iii
Glycerin . . . . . . ℥ ss.
Dose: One teaspoonful to a child of three to five years.

The iron has been employed in most of the diphtheria cases which received the antitoxin. No one, it seems to me, can peruse the foregoing statistics, especially if he has had an opportunity to observe that which promised to be a malignant and fatal disease deprived of its malignancy or virulence, without being astonished at the change in the type of diphtheria following the insertion of antitoxin. But there is a large, intelligent, and influential body of physicians who believe that the good results of the antitoxin treatment is due to the change of type in diphtheria. The doctrine of "change of type" of contagious and infectious diseases had its origin in the ancient belief that these affections depended largely upon what was termed "the constitution of the year." The significance of the term has entirely changed since the discovery of the microbic origin of these diseases. It is apparent that the type of a contagious affection must depend largely upon the conditions existing at the time, within and around the persons affected, influencing the life-history of the specific microbe. The whole subject of "change of type" of contagious diseases should be reinvestigated from the standpoint of modern bacteriology.

MEDICAL PROGRESS.

Version or High Forceps.—As the result of a considerable clinical experience, SCHULTZ (*Zeitschrift für Geburtsülfe und Gynäkologie*, B. xxxiv, H. 2, p. 174) formulates the following rules of guidance in the choice of either version or high application of the forceps in cases of difficult labor. Instead of prophylactic version expectancy should be observed. If the amnion has not ruptured, or immediately after escape of the amniotic fluid, version should be practised when an indication exists to terminate the labor at once. If the amniotic fluid has already been lost for some time, high application of the forceps is to be preferred to podalic version. If, under these circumstances, the os uteri is not sufficiently dilated and immediate termination of the labor is indicated, dilatation should be facilitated by multiple incisions or by means of Barnes' rubber bags. The high application of the forceps may be successfully practised in moderately contracted pelves if the os uteri is sufficiently dilated. If the degree of pelvic narrowing is considerable, the high application should be only tentative. In its failure, perforation of the head would be indicated. The high application of the forceps does not demand the same skill as version in order to bring about a successful result for mother and child. It does, however, require dexterity, although not more than any other obstetric operation.

THERAPEUTIC NOTES.

The Effects of Certain Laxatives in the Presence or Absence of Bile.—STADELMANN (*Archiv. für Exper. Pathologie u. Pharm.*, Bd. 37, p. 352,) established permanent biliary fistulæ in dogs, but allowed the animals during the night to lick up the bile which flowed from the fistulæ. Strictly speaking, therefore, they were not absolutely void of bile in their intestines, but the quantity must have been extremely small. Under these circumstances he found that the following drugs lost almost completely their laxative action: podophyllin, jalap, scammony, rhubarb, and convolvulin. Aloes and senna, however, preserved their usual action.

Buccal Leucoplasia and its Relation to Syphilis.—According to LEGRAND (*Gaz. Hebdom. de Med. et de Chir.*, December 20, 1896,) the leucoplasia which develops in old syphilitics is to be looked upon as a parasyphilitic affection in the same sense as tabes, or general paralysis. This point is important in connection with its treatment, as antisyphilitic remedies in these cases are not only without effect but are annoying and dangerous. The only safe treatment is an early surgical one, for the physician ought never to forget that these leucoplastic areas frequently degenerate into cancer.

Subcutaneous Injections of Guaiacol with Chloroform.—COLLEVILLE (*Centralbl. für innere Medicin*, No. 51, 1896,) has obtained good results in various painful lesions by the injection of from fifteen to sixty drops of a mixture of guaiacol and chloroform, in a proportion by weight of four parts of guaiacol to five of chloroform. The injections have only a local anesthetic action, but as they can be frequently repeated without disadvantage, they can be used instead of morphin not only in neuralgia and neuritis, but also to relieve the pain in rheumatism, fractures, etc.

A Case of Cancer Treated by the Roentgen Ray.—VOIGT (*Lyon Médical*, No. 51, 1896,) had charge of a man aged eighty-three who suffered great pain from a cancer situated on the left side of the tongue. There was almost constant ptyalism, with difficulty in swallowing and in opening the mouth, and there was neuralgic pain in the ear and in the occipital and facial branches of the facial nerve. For some weeks he had received daily two or three injections of morphin of a third to a half of a grain each. Treatment was then begun with the Röntgen ray, the exposures lasting from fifteen to thirty minutes each. The pain was greatly diminished from this time on. For fifteen days he either received no morphin or else a single dose in the evening to produce sleep. This treatment was continued for two months when the patient contracted pneumonia and died. During this time there was very little pain, and its absence could not be attributed to a destruction of the sensory nerves as sensation was not impaired. Nor can one think of a "suggestion" lasting eight weeks. The cancer continued to grow steadily, ptyalism persisted, and difficulty in swallowing increased. After the eighth exposure there was a marked pigmentation of the skin of the neck which afterward became almost as black as that of a negro.

Treatment of Post-partum Hemorrhage.—In an article on post-partum hemorrhage LAIRD (*Lancet*, December 19, 1896,) recommends the following method in obstinate cases: Pass the disinfected hand into the womb, close it, and with the left hand compress the uterine and ovarian arteries against it on each side. If this pressure for a few minutes does not control the bleeding, a swab of absorbent cotton saturated with a styptic and held in the palm of the hand may be squeezed from time to time, and by a slight rotation of the hand the styptic may be smeared over the whole surface of the uterus.

A New Test for Albumin and Peptone in the Urine.—YAVOROVSKY (*La Méd. Mod.*, No. 58, 1896,) adds an excess of sodium carbonate to the urine, filters it, evaporates it to one-third of its volume, then filters it again. To 4 cm. of the filtrate is added one drop of a solution of one part of ammonium-molybdid and four parts of citric acid in forty parts of water. If albumin or peptone is present, cloudiness results either immediately or after a certain time. If this is due to peptone it dissolves on warming and reappears on cooling.

Iodin Injections in Hydrocephalus.—RANKE (*Jahrb. für Kinderheilk.* Bd. 39, S. 359,) describes a case of hydrocephalus treated by iodin injections. The patient was a child ten months old. The left ventricle was punctured and 320 c.c. of serum was let out. After this 10 grams of tincture of iodin diluted with 20 grams of water was injected into the left lateral ventricle. There was a slight febrile reaction. Within two and a half weeks after the operation a noticeable diminution in the size of the head was observed. About four weeks after the treatment the patient succumbed to a fatal enteritis.

The autopsy revealed an adhesive inflammation of the walls of the ventricle into which the injection was made, with a resulting diminution in the size of its cavity.

The Best Aristol Ointment.—FAGEARDIE (*Jour. de Médicine*, December 20, 1896,) who has experimented in order to determine the best vehicle for an aristol ointment, finds that if glycerol of starch is used the aristol undergoes partial decomposition with the formation of free iodin. With vaselin there was no decomposition but the ointment was not very homogeneous. With benzoinated lard there was also a feeble liberation of iodin. With wax and with lanolin no iodin was set free, and the ointment was perfectly homogeneous. These substances are therefore best fitted to be used as vehicles for aristol ointment.

An Instance of Trional Poisoning.—GIERLICH (*Centralbl. für innere Médicin*, No. 51, 1896,) had a patient afflicted with morphinomania of a slight degree who, during a period of two months, took daily on account of sleeplessness about 45 grains of trional. Serious nervous symptoms developed. Marked ataxia, a light tremor over the whole body, and a deep depression of mind which could only be broken by strong stimulus were the chief symptoms. The memory was much affected as were writing and speech. There were no delusions. After the trional was withheld (the morphin being continued in the usual dose) the condition gradually improved, but it was five weeks before the last traces of nervous disturbance disappeared. The practical lesson in this case is that if trional is to be given for a long time, the dose must be greatly reduced or omitted altogether occasionally in order to allow its complete elimination.

Mechanical Massage of the Abdomen.—OETKER (*Deutsche Med. Wochenschrift*, No. 20, 1896,) recommends as a treatment for chronic constipation mechanical massage by means of a five-pound iron ball, thickly covered with woollen stuff and fixed in a small frame. The patient lies in a horizontal position, and rolls the ball over the abdomen. By experiments upon himself, the author determined that five minutes of this massage was sufficient to produce defecation in less than half an hour, at times of day when it was not his custom to have an evacuation of the bowels.

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SATURDAY, MARCH 6, 1897.

THE HEALTH BOARD AND COMPULSORY REPORTS.

ONE would infer from certain caustic comments recently promulgated that the New York Board of Health was planning a deadly attack upon the medical profession, instead of tendering its most efficient and kindly offices to assist in a grand campaign against the common enemy, tuberculosis. We are combatting a disease that is universally recognized as the greatest scourge of mankind. We shudder at the number of victims of the plague in India, and are ready to adopt the most stringent measures to hold it in restraint. And yet all the victims of this plague up to the present time in the entire presidency of Bombay number but few more than the individuals that fall a prey to tuberculosis in the City of New York alone every year.

The discovery of the tubercle bacillus marked a great epoch in the knowledge of tuberculosis. It was a still greater advance when science pronounced the disease infectious and communicable. But the crowning glory of medicine in this direction was achieved when we were able to say that it is a preventable and curable malady.

The medical profession of New York does not need to be told of the great fatality of tuberculosis, nor does it need further enlightenment to bring conviction of the fact that it is a communicable and a preventable disease. It will therefore be a great surprise if the profession hesitates to lend the power of its influence and its cordial coöperation in every effort to stay its course. The movement recently inaugurated by the Health Board of New York is the beginning of a grand crusade that has no less an aim than the final extirpation of the entire race of tubercle bacilli and the emancipation of mankind from his fatal grasp. This campaign is one of education simply. And it is only necessary for anyone to read the history of the work of the New York Board of Health in its supervision of tuberculosis during the past few years, as set forth in the now famous announcement of January 20th, to see how wisely the object-lessons have been presented to the people in its gradually maturing plan of education. By means of their superior and unusual laboratory and bacteriological opportunities, the medical directors of the Health Board have naturally become the leaders in this movement, and through a system of gradual extension of wise supervision and management of the victims of the disease, have evolved a complete and practical system of control. The success of it depends upon the careful execution of every component part. A weak link in a chain nullifies its entire efficiency. A single slip in one detail of the asepsis of a surgical operation thwarts the whole system. The one important link in this system which the medical profession is asked to supply is to report all cases of tuberculosis that come under its observation. The cases in the early stages, and when found among the class of people who have the intelligence and ability to properly care for themselves, are reported for statistical purposes; the more serious cases, and those found in the less prosperous classes, for inspection and control, if necessary. As the *Medico-Surgical Bulletin* says:

> No one need fear the presence of a scrupulously clean consumptive. It is the dirty sputa of dirty consumptives, and not the bodily presence, that contaminate and endanger. If the patient refuses to heroically act for his fellows (in exercising proper sanitary precautions) he can be shown the necessity of acting to save himself. If he is too stupid to grasp the facts in this direction then let the Board of Health sit in judgment on his case and condemn him to a hospital where he can be watched and compelled to be clean. Isolation is wholly unnecessary if the

patient is scrupulously cleanly. Isolation should be absolutely certain for every patient that refuses [or is unable] to be such.

What more reasonable! What more just!

The Committee on Hygiene of the New York County Medical Society, at the February meeting, presented a report endorsing and commending the action of the Health Board. That wise councils will prevail and this action of the committee be endorsed by the Society at the March meeting when the report comes up for discussion, is the expectation of all who have faith in the wisdom of the majority. The County Medical Association will discuss a motion at at its next meeting condemning the action of the Health Board. This resolution, however, has not been presented by any committee of the Society, and presumably carries only the opinion of the individual who introduced it. In the judgment of so important a measure bearing upon public safety and health there is no place for personal prejudices or exaggerated notions about individual rights and violated prerogatives. The medical profession of New York has shown itself capable on occasion of subordinating to the welfare of the community ill-considered thoughts of personal injustice and of following the illuminated path of scientific truth. These Societies will honor themselves by casting their potent influence on the progressive side of this beneficent movement.

The *Indiana Medical Journal*, in commenting upon this subject, says: "To discourage in any way this effort—even this dream, if so it prove—of relieving mankind is more than editorial atrophy; it is moral obliquity and impiety."

THE EARLY DIAGNOSIS OF TUBERCULOSIS.

WHETHER the diagnosis of tuberculosis in its early stages is simple or not, depends upon what is understood by "its early stages." It is, therefore, rather questionable teaching to maintain that the signs observed even in the earlier stages are easily enough recognized by the merest tyro in auscultation. That localized dulness at the apex, the prolonged, high-pitched expiratory murmur, the circumscribed râles, the hemoptysis, and the dry, hacking cough, are too significant to leave any doubt in the minds of the most casual observer, is true enough. But who in these days would think of regarding such physical signs and symptoms as indicative of an early stage in tuberculosis!

It is indeed commendable in our "merest tyro" to make a diagnosis even at this juncture, and he is to be encouraged in his desire to make such diagnosis, but he must not, by this flattering success, be deluded into the belief that he is recognizing phthisis in its early stage, or hope thereby to stay the progress of the disease. Our "tyro" must be informed that more modern methods of investigation have discovered instruments of such precision and tests of such reliability and accuracy that they discount by many weeks and months the date at which the stethoscope is of diagnostic value. The persistent presence of tubercle bacilli in the sputum of a patient, even when all other diagnostic signs are absent, is a menace to his welfare, and must be reckoned with by the attending physician. On the other hand, localized dulness in the lungs, with prolonged, high-pitched expiratory murmur, and circumscribed râles, with cough, fever, and emaciation, have been confidently conducted to a successful issue, when repeated examination has shown an absence of the bacilli from the sputum.

But a still more delicate criterion, and one that is rapidly coming into use among experts, is the tuberculin test. Koch has used this with most reliable and satisfactory results in five thousand cases in which physical signs were absent, and in which bacilli could not be discovered in the sputum. The Health Board has also been using it in suspicious cases, in which all other tests proved negative, with most gratifying results as to the accuracy of its revelations. And Dr. Trudeau of Saranac, in a recent personal interview declared that after careful and long continued observation he had come to regard the presence or absence of reaction after tuberculin injections as the final and decisive test in cases of supposed cure. In the case of patients who no longer present any clinical evidence of the disease, it is getting to be his custom before declaring them cured and consenting to their return to former homes and occupation, to subject them to the tuberculin test. When no reaction occurs the patient is pronounced cured, but when the characteristic phenomena are present the clean bill of health is refused. In a paper presented recently before the New York Academy of Medicine, the same authority said: "If there is expectoration and the presence of the bacillus cannot be detected by repeated and thorough examinations, a positive conclusion can often be reached within three weeks by inoculation of the expectoration in the guinea-pig, and when there is no expectoration, by the tuberculin test.''

THE VASO-MOTOR INFLUENCE OF CHLOROFORM AND ITS RELATION TO CHLOROFORM ACCIDENTS.

The fact that chloroform is a much-used and valuable anesthetic, and that it possesses dangerous properties which have prevented a great many eminent physicians from employing it, renders any information we can gather concerning its effects of superlative interest, first, because conflicting views of pharmacologists and clinicians still are met with in the journals, and, second, because a true explanation of the primary effects of the drug, and the consequent understanding of the course to pursue in order to avoid accidents, will go far toward overcoming its dangers.

The first fact to be borne in mind is that the students of the effects of chloroform have been divided into two schools, the one asserting that the danger to be apprehended from the use of the drug lies in its effect on the respiration; the other, that it paralyzes the heart and causes death by this means. It was to decide this mooted point that the various Hyderabad commissions were appointed, and that a very large number of other investigations have been carried out, among which may be named, as having been published in America, those of H. C. Wood, and the author, and others under the direction of the Hyderabad Government by the author and his assistant, Dr. Thornton, Demonstrator of Therapeutics in the Jefferson Medical College. There have been other studies of the subject made in England, notably by Gashell and Shire and by MacWilliams. These more recent studies, combined with the older ones, prove one point, viz., that chloroform is a depressant poison to all living protoplasm when brought in direct contact with it, and whether the protoplasm be nervous, muscular, or corpuscular the same lethal influence is produced if the drug be present in a concentrated form. We may start out with the fundamental fact, therefore, that the dominant action of chloroform is depressing, and that, if it comes in contact with the heart even in medicinal quantities, it tends to weaken that organ. On the other hand, if it comes in contact with the respiratory center, this protoplasm is depressed to a degree dependent upon the actual quantity of chloroform used and the individual resistance of the vital parts to its influence.

It is thus easy to understand that on one animal or human being, either in health or disease, the drug may exert a very positive effect on both the respiratory function as well as on the heart, or may expend its chief influence on one of these alone. Thus a very slight degenerative process in the heart muscle or its nervous centers, or even its dilatation and engorgement caused by violent struggling, might render these parts unduly susceptible; or the respiratory center, from some similar cause, may feel the chief brunt of the drug. I believe that it is possible for death to result from chloroform inhalation by either heart or respiratory failure, but I also believe that cases of the former are very rare, and of the latter much more common. In the first named class of cases disease of the heart is present, and there is every reason to believe that many of the chloroform deaths from heart failure, so-called, would have occurred if the patient had had to submit to an operation in which an anesthetic was not used. Indeed, there are cases on record, prior to the use of anesthetics, in which death took place from the fright and pain attendant upon the simplest surgical procedures.

The mere fact that a pulseless radial artery is found during a chloroform accident is not proof positive of heart failure, and it is interesting to note that in the cases of accident through the use of the drug collected by Thornton and myself from private sources, nearly all were reported as being due to respiratory and not cardiac causes.

In admitting that chloroform exercises a depressant effect on the heart and respiration, particularly the latter, I wish to emphasize one fact, about which there is little or no conflict of opinion in laboratory or practical test, namely, that the dominant or overshadowing influence of chloroform is upon the vaso-motor centers; and I cannot lay too much stress upon the fact that an intact vaso-motor system is as essential to life as an intact heart. The action of the heart is so closely associated with the state of the blood-vessels as to be altered the moment the arterial pressure rises or falls, for the heart, after all, is nothing more than a highly specialized part of the vascular apparatus. The capillary area of the body is so many times greater than that of the arteries that, if the arterioles relax and allow the blood to flow freely into the vast capillary networks of the muscles and glands, no blood will find its way to the veins or to the heart. Even if the heart is intact, it cannot pump blood if none is returned to it by the veins, and the familiar condition of unconsciousness, or syncope, known as "fainting," takes place. This is exactly what occurs when a patient has a sudden "bad turn" under chloroform. The agent has caused sudden dilatation of the peripheral blood paths by depressing the vaso-motor center, and the patient faints. If so much chloroform has been used that the center cannot recover itself, death occurs, for the man is bled to death in his own vessels. This condition explains the loss of the radial pulse, the failure of respiration, and the sudden peril of the patient.

Now as to the evidence to prove that the dominant action of chloroform is to depress the vaso-motor center: the experiments of all, or nearly all, investigators have shown that this drug, as ordinarily given, produces a fall of pressure, although in the first moments of inhalation there may be a rise which is due to excitement. Bowditch, Minot, Couts, Wood, the Hyderabad commissioners, my own studies, with and without Thornton, and all teachings I have ever seen, prove this fact. This is the experimental evidence; the practical evidence lies in the fact that accidents from chloroform anesthesia result more frequently when the drug is given to a patient who is in the erect or semi-erect position than when lying prone. Inversion of the body of the patient under these circumstances, even in apparently hopeless cases, will often serve to resuscitate him by causing a portion of the blood to enter the feebly beating heart from the veins, and so reach the vital centers in the medulla, as well as filling the coronary arteries, an equally important matter. Again, accidents from the use of chloroform are exceedingly rare in parturient women, because the compression of the abdominal vessels cuts off a large vascular network and the pains stimulate the vaso-motor center. Then we know that if atropin, a valuable vaso-motor stimulant, is given before the administration of chloroform, the later drug may be given with greater safety. Finally, I wish to mention an important clinical observation. On one occasion I gave chloroform to a feeble woman whose condition demanded an abdominal section. The face suddenly became pallid, the radial pulse disappeared, and the heart sounds could not be heard. The operator immediately grasped the abdominal aorta to determine if the heart had ceased to beat, and as he compressed it the pulse in the radial artery at once returned. The compression of the artery prevented what little blood the heart had to pump from flowing onward and stagnating, and, by restoring to a certain degree the normal pressure, produced a tonic cardiac influence; for the normal heart must have arterial resistance in order to perform its proper functions.

My conclusions, therefore, are that chloroform generally kills by its vaso-motor poisoning effect, which deprives the heart and respiratory center of blood, and simultaneously the drug itself aids in the embarrassment of these parts. From these conclusions we may draw the following practical deductions:

1. In all cases when chloroform is to be given to a feeble patient the extremities should be tightly bandaged.

2. Atropin should be given as a vaso-motor stimulant.

3. A large compress should be tightly bound over the abdomen if this is at all relaxed, or if an accident occurs.

4. The patient should be inverted, if syncope occurs.

5. Artificial respiration, performed by compressing the floating ribs and precordium, should be employed to aid in the circulation of the blood, to pump the chloroform vapor out of the lungs, and to aid the respiratory center in its functions.

6. During the use of chloroform the respirations should be watched for two reasons, (*a*) because the depth and rapidity of the breathing is a gauge of the amount of chloroform inhaled (for the amount on the inhaler is not the dose), and, (*b*) because as the blood pressure falls, the respiratory center becomes disturbed in its function and the irregular breathing shows that the chloroform is disturbing it. Further, irregular breathing means irregular dosing, for twenty deep inspirations a minute means more chloroform inhaled than twenty shallow ones. The respiration is the dose gauge.

7. It is useless to resort to saline transfusion in chloroform syncope, for the vessels of the body can hold many times the amount of blood in them, and unless quarts are transfused, the relaxed vascular system simply absorbs the fluid and cannot be filled.

Finally, let me mention a statement of Leonard Hill, in his excellent brochure on "The Physiology and Pathology of the Cerebral Circulation," recently published, in which he shows that chloroform so lowers blood pressure that, though the heart is still beating and draining a trickle of blood into its coronary arteries, it does not supply the respiratory center, if the blood paths are relaxed by chloroform, but that abdominal pressure restores the flow.

I could cite numerous examples in proof of the sudden and serious effects of suddenly relaxing the blood paths, but the facts I have adduced seem sufficiently convincing, and the old discussion as to whether chloroform kills by cardiac or respiratory failure, seems fair to be decided, to the effect that the influence on those functions is indirect, and that the vaso-motor effect is the important factor.[1] When chloroform is taken, blood pressure falls, the respiration is disturbed, the dose of chloroform is excessive, and the drug aids the anemia of the vital centers by a direct depressing influence.

H. A. HARE, M.D.

ECHOES AND NEWS.

An Epidemic of Scarlatina.—The alarming spread of scarlet fever at the State Normal School at Bridgewater, Mass., has caused the closing of that institution.

Western Ophthalmological, Otological, Laryngological, and Rhinological Association.—The second annual meeting of this Association will be held at St. Louis, April 8 and 9, 1897, and promises to be of much interest.

Expectorating in Cars.—It is reported from Chicago that a well-known lawyer, of prominent social and political position, has been arrested for expectorating in a street car. He threatens to sue the company for $50,000 damages.

Insanity in Egypt.—So far as could be ascertained the causes of insanity in the 477 cases treated in the government asylum of Cairo, Egypt, last year, were: Hasheesh, 88; alcohol, 9; syphilis, 27; pellagra, 11; epilepsy, 17; sunstroke, 2; grief, 30; religious excess, 16.

Bellevue Chapel Dedicated.—The Arthur Leary Memorial Chapel of the Blessed Sacrament, on the grounds of Bellevue Hospital, was dedicated February 28th. Archbishop Corrigan officiated. The sermon was a tribute to the memory of Arthur Leary and to the generosity of Miss Anna Leary, his sister, who erected the chapel.

To Investigate the Plague.—The Academy of Sciences of Vienna has sent to Bombay a commission composed of Dr. Hermann Müller, Dr. Ghon, Dr. Albrecht, and Dr. Pöch, to investigate the nature of the plague. The expenses are defrayed by the Treitle fund left to the Academy by the late Herr Treitle, and amounting to $500,000.

A Lectureship in Bacteriology.—The Linnean Society of New South Wales to which reverted the sum of $60,000 for the establishment of a lectureship in bacteriology, is now prepared to equip a laboratory, and desires to receive applications for the lectureship. The salary is $1750 per annum.

Electricity Without Heat.—By the use of chemicals in a small battery constructed by himself, Willard E. Case of Auburn, N. Y., has oxidized coal without the aid of heat and produced sufficient electricity to set a bell ringing. In a recent demonstration before the New York Electrical Society, he also made use of human blood in the same way, drawing the oxygen from the air, and produced an electric current.

Consumption in Cleveland, Ohio.—The Health Department of Cleveland announces that tuberculosis was the principal cause of death in that city in 1896. There were 265 cases. Cholera infantum came next with 255 fatalities, diphtheria 177, and typhoid fever 143. The frequency of death due to consumption seems to point out the necessity for proper isolation and other regulations. Work is now being done along these lines.

School Inspection Plan Delayed.—The N. Y. Health Department had anticipated putting into operation its plan for the daily medical examination of school children February 1st. This has been delayed, however, because the Civil Service Board has not yet finished an eligible list of the 218 physicians who were examined for appointment to the corps of medical school inspectors. Until it is furnished the board can make no appointments.

New York's Clean Streets.—The healthfulness of New York has been greatly enhanced by the clean condition of the streets. It is expensive but it pays. In a recent communication on the subject Colonel Waring says: "We have considerably less than 400 miles of paved streets on this island, and it costs us pretty nearly $3,000,000 a year to keep them in order. We sweep sixteen miles from three to five times per day; over 200 miles twice a day, and the remainder once a day."

Obituary.—Henry A. Creamer, M.D., of Brooklyn, died February 20th of pneumonia, after an attack lasting about a week. He was a native of Brooklyn, a son of the late Dr. Joseph Creamer, ex-police surgeon, and brother of Dr. Joseph M. Creamer, ex-coroner of Kings County.

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[1] For facts showing that the apparently arrested heart is really beating in many supposed instances of cardiac cases, see my report to the Indian Government (*Therapeutic Gazette*, October, 1893), and my recent papers in the *Therapeutic Gazette*, February, 1897.

He was graduated from Bellevue Hospital Medical College in the class of 1892. He was a member of the Physicians' Mutual Aid and New York State Medical Associations.

New Training School for Nurses in Brooklyn.—The Commissioners of Charities and Corrections of Kings County propose to establish at the County Hospital a school for nurses. The need of this school has been felt for a long time but has been of necessity deferred because of the lack of room. The Commissioners are expecting an increased appropriation which will enable them to provide the additional accomodations, as well as certain wards for convalescents.

Civil Service Appointments.—The following appointments were announced February 15th from the State civil service eligible list at Albany, N. Y.: Dr. Henry Harlow Brooks, as Associate in Bacteriology at the State Pathological Institute in New York City; salary, $500. Dr. Arnold Graf, as Associate in Biology at the same institute; salary, $900. Dr. Henry P. Frost of the Willard State Hospital, as First Assistant Physician in the Buffalo State Hospital.

A Popular Hospital Fund in London.—The Prince of Wales has issued to the English Press a communication in which he suggests the creation of a fund to be called the Prince of Wales' Hospital Fund for London, to commemorate the sixtieth anniversary of the Queen's accession to the throne. The object is to secure about £150,000 annually by subscriptions of a shilling and upward to meet the needs of the hospitals which are not met by existing funds.

Inspection of School Children in New York.—*Pediatrics*, in commenting on the recent regulation of the Board of Health regarding the inspection of the public schools, says: "A school inspector might be tempted to add to his salary of $300 a year by taking charge of such cases as he may detect in his rounds of inspection, thereby robbing the regular family physician of a patient;" and suggests that the Board of Health pass such rules as will safeguard the general practitioner and remove from the inspectors the temptation to use their opportunities to their own advantage.

The Passaic Valley Sewerage.—The report of the Passaic Valley Sewerage Commission has been submitted to the New Jersey State Legislature. The conclusions of the commission are that the Lower Passaic River is so polluted as to constitute a public nuisance, requiring immediate remedy, and that an act of the Legislature should be passed authorizing the construction of a trunk sewer and branches to conduct the sewage of the cities and towns along the lower river to the tide water of Newark Bay.

The Wisconsin Diploma Mill.—It is reported from Chicago that Frederick Rutland, who calls himself a doctor, and President of the Wisconsin Eclectic Medical College, has been arrested by the government officers on the charge of using the mails to defraud. It is claimed he has been issuing fraudulent medical diplomas upon the payment of sums ranging from $10 to $50. His method has been to allow the student to "study at home," and then to forward a diploma upon receipt of the money and the answers to a set of questions. He claims to have graduated 907 students last year.

Diphtheria Antitoxin Still in Demand.—In the recent discussion on diphtheria before the N. Y. Academy of Medicine, Dr. Winters remarked that it was a significant fact that while the New York Board of Health one year ago kept eight horses for the production of antitoxin they now had only four. In reply to this, Dr. Park of the Board of Health, said that at the present time the serum sent out by the Board was five times as strong, bulk for bulk, as formerly, and this explained the fact that fewer horses were therefore needed. As a matter of fact, however, nine horses instead of four were now used for this purpose.

Report of Committee on Hygiene of the New York County Society.—Realizing the need of proper measures to prevent the spread of pulmonary tuberculosis, and regarding it as an essential preliminary that all physicians be impressed with the importance of making an early diagnosis of the same by microscopical examination of the sputum, we earnestly recommend that physicians avail themselves of the offer of the Bacteriological Department of the Board of Health to make such examinations. We approve of the compulsory reporting of cases of pulmonary tuberculosis, if the inspectors are forbidden to visit or to have any communication with the patients without the consent of the attending physician, believing that the attending physician is capable of giving all the necessary instructions. W. H. Katzenbach, Chairman; J. Harvie Dew, Robert C. Myles, Chas. N. Dowd, Egbert Le Fevre.

Western Surgical and Gynecological Association.—The sixth annual meeting of this flourishing association was held in the Senate Chamber of the State House at Topeka, Kan., December 28 and 29, 1896, and was largely attended. Many interesting papers were read and discussed. Denver was chosen as the next meeting place. For the ensuing year the following officers were chosen: President, Dr. Joseph Eastman of Indianapolis, Ind.; first vice-president, Dr. D. S. Fairchild of Clinton, Ia.; second vice-president, Dr. B. B. Davis of Omaha, Neb.; secretary and treasurer, Dr. Herman E. Pearse of Kansas City, Mo. Executive board—Dr. L. Schooler of Des Moines, Ia.; Dr. M. B. Ward, of Topeka, Kan.; Dr. T. J. Beattie of Kansas City, Mo.; Dr. C. Lester Hall of Kansas City, Mo., and Dr. J. P. Lord of Omaha, Neb. Dr. W. W. Grant of Denver was chosen chairman of committee on arrangements.

The Health of Chicago.—During the month of January the total number of deaths from all causes in Chicago was 2026, or 1.25 per 1000, the population reckoned at 1,619,226. Of this number, consumption claimed 187 victims, pneumonia 290, bronchitis 172, diphtheria and membranous croup 76, cancer 67, typhoid fever 38, other acute intestinal diseases than typhoid 139, heart disease 105, and nervous disease 186. Two hundred and seventy-three cases of diphtheria and 87 of scarlet fever were reported, and 11,733 persons were vaccinated. Of the reported cases of diphtheria, 125 were bacterially verified as true cases of the disease, and 120 of the patients received treatment with antitoxin, 112 of whom recovered. Ninety-eight persons received immunizing doses of antitoxin, and none of these developed the disease. It is interesting to note that the age of those attacked ranged from a few weeks to over ten years, and that of those who recovered 17 received the injection on the first day of the disease, 29 on the second day, 29 on the third day, 21 on the fourth day, and 28 on days later than the fourth. Of the fatal cases, 1 patient was injected on the second day, 3 on the third, 1 on the fourth, and 3 later than the fourth day. All of the cases resulting fatally had severe complications, the gravest being one of nasal diphtheria with septic pachymeningitis. Four were intubation cases. Forty per cent. of all cases showed a mixed streptococcus and staphylococcus infection.

Regulation of Hospital and Dispensary Work in the District of Columbia.—The Medical Association of the District of Columbia has adopted the following resolutions: (1) That every institution for medical charity shall require from every applicant for relief in a hospital or dispensary, a written certificate to be obtained as hereinafter provided. Emergency cases are to be exempted from this rule. (2) That such certificate be obtained from Physicians to the Poor, the Board of Associated Charities, and any registered physician. (3) That cases of sick and injured persons found upon the streets, in the stations, or elsewhere, who require immediate treatment, shall be carried to the Emergency Hospital, or to the nearest hospital having an emergency service, or to their homes, if so directed by the patient or his friends. (4) That emergency patients shall not be detained longer in such institutions than the necessity of the case imperatively demands, but shall be discharged from the service and sent to their homes or to some public hospital as the patient may elect. (5) That members of this Association shall be entitled to the privilege of attending private patients occupying private rooms in any of the public hospitals of this city. (6) That in future the members of the medical staff of hospitals when attending medical or surgical cases in private pay-rooms shall insist upon proper payment for their services, except in the case of such patients who are clearly unable to pay for same. (7) That whenever the medical staff, or a majority thereof, of a hospital or dispensary resigns, and, when after due hearing, this Association finds that the resignations were for just and sufficient cause, it shall be forbidden for any member of this Association to accept a position on the staff of said hospital or dispensary. (8) That whenever one or more members of the medical staff of a hospital or dispensary are dismissed, and when after due investigation, this Association finds that such dismissal was without just and sufficient cause, it shall be forbidden for any member of this Association to fill the vacancy created thereby. (9) That complaints made under Rules 7 and 8 shall be made in writing to the Standing Committee, which after due consideration shall report its findings to the Association.

Serum Diagnosis of Typhoid Fever.—Dr. Gehrmann and his assistant, Dr. Wynkoop, of the Chicago Board of Health, furnish the following note concerning their work with the Widal-Johnston application of the Pfeiffer test for typhoid fever: "The systematic examination of suspected typhoid cases for physicians was begun by the laboratory November 20, 1896. Up to January 31, 1897, 158 cases had been subjected to the test. In 99 cases the typhoid reaction was observed, and in 59 it was absent. In 57 cases, subsequently proved to be typhoid from the clinical course, the reaction failed in 5 and a negative report was rendered. We attribute this to the hurried examination often required, and failure upon the part of the physician to send enough blood. Pseudoreactions have been numerous. Eight cases of pneumonia and one case of bronchitis and pleurisy, giving typical pseudoreactions, were of special interest, in that this is the greatest number of cases of any one disease other than typhoid examined by us. The reaction was entirely absent in only one instance—where the clinical diagnosis was pneumonia. Owing to the increased occurrence of pseudoreactions where the dried blood, with all its albuminous elements, is used, we have decided regularly to delay reporting the result until from eighteen to twenty-four hours after beginning the examination. This may cause some inconvenience to physicians, but by waiting the reaction can be so far verified as to make it really pathognomonic. The additional evidence toward the diagnosis is obtained by observing the increasing development of the reaction when the preparation is maintained at blood heat, or by the entire disappearance of the pseudoreaction and a very marked increase in the numbers of bacilli present. We have found that it is not specially necessary to use attenuated or old typhoid cultures to obtain good results when the observation is prolonged for such a period. The reverse of the typhoid-serum diagnosis in the differentiation of cultures from water is now used in such cases as show growth for the typhoid-coli group of organisms by the method of Parietti. So far no culture has been isolated from the water supply of the city that would give the reaction with serum from typhoid cases, although we have recently found *B. coli communis* in a number of instances. It has been impossible on this account to make use of the method for rapid diagnosis of typhoid in water as was at first hoped. Apparently it can be of value only in the differentiation of cultures after the usual methods of separation of suspicious organisms."

CORRESPONDENCE.

OUR PARIS LETTER.

[From our Special Correspondent.]

DIPHTHERIA GERMS IN THE NORMAL THROAT—DIFFERENTIATION OF PATHOGENIC BACTERIA—BEHRING'S MODEST VISIT TO PARIS—NOCARD WINS THE LACAZE PRIZE.

PARIS, February 4, 1897.

AFTER having labored long and conscientiously to make it clear that certain particular forms of bacilli were always the necessary cause of certain specific diseases, it would seem now as though bacteriology was about to confess that pathogenity is not essential to anẏ form of bacillus; that one may have present certain special forms of bacilli, that up to this have been considered specifically pathogenic for certain diseases, without the production of those diseases; in other words, that the pathogeneity of a bacillus, or family of bacilli, is dependent upon some modifications of the bacillus due to climatic or nutrient conditions, or due to its passage through individuals under certain circumstances, causing an increase in its virulence.

Probably the first thing that set the current of thought seriously in this direction was Roux' and Yersin's discovery of the diphtheria bacillus in a large number of normal throats, and in parts of the country where diphtheria had not been epidemic for years. This experience is not uncommon in America and has been made one of the stock arguments—probably the most effective one—against the statistics of diphtheria as treated by antitoxin, there being no doubt that numbers of cases are treated as diphtheria by the antitoxin that would not have been considered diphtheria at all a few years ago; bacterial diphtheria it may be, but without the clinical symptoms.

After this came the description of various technical methods of differentiating two very important bacilli (Eberth's typhoid bacillus and the cholera bacillus) from a host of very similar bacilli rather widely spread in nature. For a good many years this effort at differentiation was thought to be successful, though newer and constantly newer technical methods had to be invented, each more complicated than the last, in order to enable the bacteriologist to decide with certainty as to the presence of the specifically pathogenic germ for these two diseases. Water statistics collected during the years that marked the progression in technical manipulations became almost completely valueless from the standpoint of typhoid and cholera.

Now the leaders seem to be giving up the effort at further differentiation and are coming around to the view that it is a family of bacilli one has to deal with in each of these diseases. Some of the members of each family are specially pathogenic and some are not. These last may become virulent under certain conditions not well understood, but the main one seems to be the passage of the bacillus through one or more individuals whose lowered resistive vitality make them subject even to the originally attenuated virulence of the bacilli. This gain in virulence by passage through a series of animals is, of course, well known and founded on any number of observations.

Roux, in his lesson on typhoid before Christmas, in the course at the Pasteur Institute, showed how strongly his views were tending toward the belief that changes of virulence dependent on biotic changes in the protoplasm of microbes were the rule rather than the exception and that microbes specifically pathogenic at one time may not be so at another; or, what is still more important, that non-pathogenics may become, at a given moment, virulently pathogenic. In his remarks on diphtheria, the same tendency was evident. Metschnikoff, in his masterly review of the microbiology of cholera, that maze out of which there seems no sure road, and which has been for him a subject of very special study, gave as his conclusion that the comma bacillus, usually considered as the cause of cholera, was widely spread in water in many places, practically all over the world, and that its specificity in the etiology of cholera was due to extrinsic circumstances that modified its virulence. This, too, despite the claims that are made for Pfeiffer's reaction as a criterion by which to separate the true and false cholera bacillus, for in the lakes at Versailles, where there had been no cholera for years and where there had never been anything approaching an epidemic, it being one of the few places close to Paris always exempt, bacilli were found that, after having been submitted to all the tests possible at the Pasteur Institute, were pronounced indistinguishable from true cholera bacilli. They were then sent to Pfeiffer himself at Berlin, who announced that some of them reacted positively to his test and were to be looked upon as true cholera bacilli, though others did not.

Duclaux, who is Pasteur's successor as the Director of the Institute Pasteur, is giving a series of lessons on the biological chemistry of water. He, too, shares the opinion that it is a family of bacilli sometimes pathogenic, sometimes not, and widely spread in nature that we are dealing with in the microbiology of typhoid and cholera. With regard to typhoid, he is as positive as is Metschnikoff regarding cholera. He referred especially to some work unpublished when he spoke, but which has since been reported to the Society of Biology. Two physicians in the military service at Val de Grâce have found, as far as all bacteriological tests are concerned, true typhoid bacilli in the dust of the floors of wards in the hospital where there had been no typhoid cases for years. Duclaux deprecates that this seems to make doubtful the hygienic precautions with regard to water supply that seemed so simple and so sure. For it would seem that these bacilli are so widespread in nature and so liable to become pathogenic, though they may not have been before virulent, that the simple hygienic precaution of protecting the water supply from human contamination, thought all-sufficient up to this time, may prove illusory.

It has just leaked out that Behring, returning from his wedding tour, stopped off at Paris to visit the Pasteur Institute, but with the distinct understanding that he was to be absolutely incognito to the general public. He and Roux are great friends, it seems, and are rivals in more than serum-therapy, for from this incident Behring would seem to shun popular acclamation as much as does his confrère of the Pasteur. Behring would have been given a very flattering reception in Paris by many more than the medical profession had he cared to accept it. This charming modesty of the true scientist is really delightfully refreshing as a change from the selfish, childish pretension one sees so much of in the lesser lights of the profession, whose little candles, verily, will not be hidden under a bushel if they can help it.

In company with Roux, Behring visited Alfort, where, with Nocard, he saw the action of Marmorek's serum in a case of anasarca of the horse, a streptococcic disease common enough here in France. It would have been interesting to see the three men, whose names are greatest in that new world on which is rising the sun of serum-therapy, making their observations together on the sick horses at Alfort. One wonders if the antivivisectionists would not realize after a sight like that how much of good for the animals is coming, too, from the experiments made on a few of them by the scientists, and how closely their health is bound up with that of human beings in the advances that are being made. Behring pronounced himself as assured of the success of Marmorek's serum.

In an interview with Capitan published in *La Médecine Moderne*, he is reported to have said that he had complete confidence in the serum for the cure of the bubonic plague that is being made at the Pasteur Institute, and with which Yersin's successes had just been reported at the time of his visit. Behring said a little, but very little, of his own work at present. He has an antituberculous serum that, injected into guinea pigs at the same time with the bacilli of tuberculosis, prevents them from dying from the disease. He thinks that this would be successful in human beings, in cases of acute tuberculous meningitis or generalized tuberculosis; but, in general, the amount of the toxin of tuberculosis circulating in the blood of a consumptive patient at any given time is such an indefinite affair that the dosage of the antitoxin is difficult to arrange.

The Academy of Medecine has just announced that the Lacaze prize of 10,000 francs is conferred upon Prof. Nocard of Alfort for his work on tuberculosis. His labors on the diagnosis and prophylaxis of bovine tuberculosis with Koch's tuberculin are very well known. He it is who pointed out very clearly the virulence of the blood, meat, and milk of tuberculous cattle, after having shown the identity of bovine and human tuberculosis. His work with Strauss on the rôle of contagion rather than heredity in the production of tuberculosis is also well known. The comparatively recent discovery by himself and Roux that cultures of the tubercle bacillus could be readily and rapidly made in ordinary culture media to which glycerin had been added has made observation of the bacillus much easier, and has brought much nearer to us the possibility of serum-therapy for tuberculosis.

TRANSACTIONS OF FOREIGN SOCIETIES.

London.

PERFORATING TYPHOID ULCER SUCCESSFULLY SUTURED—PERFORATION OF THE GALL BLADDER OCCURRING IN TYPHOID FEVER—LIGATION OF THE SUBCLAVIAN ARTERY FOR TRAUMATIC ANEURISM—HEMOPERICARDIUM—RESECTION OF THE SIGMOID FLEXURE FOR CARCINOMA—SUCCESSFUL SUTURE OF A PERFORATING GASTRIC ULCER.

AT a meeting of the Royal Medical and Chirurgical Society, held January 26th, **BRUNTON** and **BOWLBY** reported a case of *perforating typhoid ulcer successfully treated by laparotomy and suture.* The patient, a man aged thirty-seven years, was admitted to the hospital at the end of the second week. The typhoid fever was of a severe type. It was complicated by hemorrhage and by a relapse, which occurred at about the end of the sixth week and lasted nearly a fortnight. Four weeks after the subsidence of fever there was a severe attack of abdominal pain, followed after some hours by tympanites and symptoms of obstruction, but without nausea or vomiting.

Eighteen hours after the attack of pain began the abdomen was opened in the middle line below the umbilicus. No gas or fecal matter was discovered until the adherent omentum was separated from the coils of small intestines. Then about half a pint of dirty serous fluid mixed with intestinal contents escaped. With little trouble an indurated coil of intestine was separated and drawn out of the abdomen. The perforation was about the size of a small pea, and was situated opposite the mesentery in an area of induration thought to be an inflamed Peyer's patch. The opening was closed by ten silk sutures introduced according to Lembert's method, the outer row of which passed through normal bowel. The suture line was tested and found to be water-tight, and the lumen of the bowel at this point was not unduly constricted. Thick masses of old and recent lymph were removed from the other intestinal coils, and the abdomen was irrigated with hot water until all foreign matter seemed to be quite removed. A drainage tube was passed into the pelvis and the wound sutured. The operation lasted forty minutes, and was not followed by collapse. Recovery was uneventful. The tube was removed in forty-eight hours, and for four days nothing was given by the mouth except water in teaspoonful doses. The bowels moved on the fifth day, after an enema. For several weeks after the operation the patient had a slight, dragging pain in the abdomen, but this gradually passed away. The case was one unusually well adapted to operation and can not be compared with those cases in which perforation occurs during the height of the fever in patients greatly prostrated by the disease.

HERRINGHAM and **BOWLBY** reported a case of typhoid fever in which laparotomy was performed during convalescence for the relief of symptoms supposed to be due to perforation. No lesion was found, and recovery followed. This case throws doubt upon the recorded spontaneous recoveries after supposed perforation in typhoid fever. It has been pointed out by Fitz that there are no trustworthy signs which are pathognomonic of perforation. Symptoms similar to those which occur after perforation, namely, acute pain, frequent vomiting, and small pulse, with rigidity and tenderness of the abdomen, may be due to a local peritonitis, or simply to constipation.

MOORE thought that the usual date for perforation is not as early as is often stated. It is of assistance to remember that the perforation is usually near the ilio-cecal valve. Out of twenty-one consecutive cases at St. Bartholomew's Hospital the perforation was found to be within two feet of the valve in one-half of the cases, and within three feet of the valve in three-fourths of the cases. He said he had never seen any adhesions at the *post-*

mortem which would indicate the spontaneous healing of the perforation.

Goodall thought the symptoms in some of the reported cases which recovered spontaneously might be due to a suppurating mesenteric gland.

Hawkins described a case of *perforation of the gall bladder occurring in typhoid fever.* Jaundice occurred about one week after the beginning of the disease, and was preceded by severe pain in the right hypochondriac region, as well as in the lower portion of the right axilla. This pain increased and extended to the umbilicus. There was a temperature of 105.8° F., and a dry pleurisy developed on both sides. Three weeks later the patient died with extreme cyanosis, respirations of about sixty per minute, and more or less constant hemorrhage from the bowels. At the autopsy the right pleural cavity contained ten ounces of turbid fluid. There was slight consolidation at the base of both lungs. The gall bladder was adherent to the peritoneum about a perforation in its anterior wall. It contained a free gall stone and a quantity of purulent fluid.

Harley mentioned a similar case. Adhesions prevented extravasation, but an epigastric swelling developed. This was excised, and many small calculi and some colorless bile were evacuated.

Croly showed before the Clinical Society, January 22d, a case of *ligation of the second part of the subclavian artery for aneurism* in a man aged thirty years, who was stabbed with a pair of tailor's scissors. The hemorrhage was stopped without difficulty, but a tumor formed above the clavicle, which pressed on the brachial plexus and greatly disturbed the health of the patient, causing also pain and paralysis. Two years after the injury the subclavian artery was tied with ligatures made of gold beaters' skin. The radial pulse returned in four weeks, and the paralysis rapidly improved.

Moullin showed a case of *hemopericardium.* The patient, aged twenty, was struck on the sternum during a football game. He continued playing for twenty minutes, and then returned home and suddenly collapsed. There was some difficulty in swallowing, and great pain on the left side. The temperature was 96°, F., and the pulse 60. No urine was excreted for twenty-four hours. Thirty-six hours after the accident a violent cough, with profuse expectoration, developed, with a pulse of 140, respiration of 22, and temperature of 100.4°, F. The area of cardiac dulness gradually increased. Three weeks later he was seized with dyspnea, and the whole of the left chest was found distended and motionless. The heart sounds were audible only in the second right interspace. The pericardium was incised in the fifth space, and a drainage tube inserted. Within three hours six pints of fluid blood escaped and clotted firmly in a basin. Dyspnea at once disappeared. The tube was removed on the following day, and the patient was able to sit up at the end of a week. The left lung remained collapsed for a long time, although there was finally perfect recovery.

Lucas ligated the femoral artery for elephantiasis, following thrombosis of the left internal saphenous vein, in a man aged forty-five. Primary union followed, and three weeks later the circumference of the calf was two inches less than before the operation.

At a meeting of the Medical Society, held January 25th, **Allingham** showed a patient, aged sixty-four, from whom he had *removed a portion of the sigmoid flexure containing a carcinoma.* Bobbins of decalcified bone were used to make an end-to-end approximation, There was a slight feco-purulent discharge through the wound, but this soon ceased of itself.

Turner had occasion to perform laparotomy twice upon the same woman for strangulation of the bowel. At the first operation the strangulation was found under a band in the right iliac fossa. There was a rapid and complete recovery. Six months later she was seized with sudden pain and vomiting, and the abdomen was reopened. Strangulation had taken place under a band in the right hypochondriac region. This band was due apparently to inflammation associated with the previous attack,

At a meeting of the Pathological Society, held February 2d, **Stephens** and **Parfitt** showed specimens of three cases of hemorrhagic diphtheria. In all of them purpura and hemorrhages from the mucous membranes developed, with death from septicemia. In every case cultures from the lungs contained diphtheria bacilli. Cultures from the blood in one case contained diphtheria bacilli, in another pneumococci, while in the third both diphtheria and streptococci developed.

Before the Esculapian Society January 22d, **Silcock** described a case of perforating gastric ulcer occurring in a young unmarried woman. He sutured the perforation twenty-four hours after the attack commenced, with complete success. The perforation was in the anterior wall of the stomach toward the cardiac end. The gastric contents had escaped freely, producing peritonitis. Owing to the thickened and friable condition of the stomach wall about the perforation, the stitches in its immediate vicinity would not hold, and it was necessary, therefore, to fold into the organ a considerable tuck, a procedure that has been made use of to cure dilatation of the stomach.

At a meeting of the Liverpool Medical Institution held January 28th, **Thomas** showed a girl aged fifteen upon whom he had operated for "saddle nose" by inserting a piece of celluloid under the skin. The deformity was thus completely corrected, and the celluloid had remained in position for seven months without causing any inconvenience.

Banks related a case of a girl struck in the abdomen by a "swing-boat." There was a central abdominal swelling from the xiphoid cartilage to the umbilicus, and pain, vomiting, and fever. A median incision revealed the great omentum spread over the tumor. Through it a trocar was introduced, and thin greenish fluid escaped. A drainage tube was kept in position for several weeks. The case was regarded as one of hemorrhage into the small omental sac.

Berlin.

SYPHILITIC MYOCARDITIS—CYSTS OF THE ANTRUM OF HIGHMORE—RHINOSCOPIA MEDIA.

At the session of the Union for Internal Medicine held January 18th, **Rosenthal** presented a young man who acquired syphilis in 1895. Recently he made a considerable journey on a bicycle, drinking a great deal, and exhausting himself by hard riding. He presented the symptoms of rapid irregular pulse, a systolic murmur over the mitral and pulmonary valves, an increased second sound, and an extension of the cardiac dulness toward the right. Rosenthal looked upon the case as one of *syphilitic myocarditis.* The seat of the lesion often being determined by traumatism, in this case it was the heart which had been subjected to abuse. The prognosis was favorable.

At the Laryngological Society, October 30, 1896, **ALEXANDER** spoke of the cysts which arise from the mucous lining of the antrum of Highmore. He described seven cases in which the cysts contained a serous fluid. He admitted that the presence of such fluid free in the antrum, without the formation of a cyst, is theoretically possible, but thus far it has never been demonstrated.

KIRSTEIN spoke of his experience with a method of investigating the superior portions of the nose, proposed by Killian and called "rhinoscopia media." After cocainization a narrow speculum is introduced into the nasal cleft and opened. By this means the middle turbinate is dislocated, usually with an audible fracture. The procedure in some cases is easily carried out; in others, it is quite impracticable. The method is recommended only in those cases in which it is clinically important to obtain an accurate view of the superior nasal passages, for example, in cases of polyp. Kirstein has never seen any serious results follow this rather violent method of examination.

SOCIETY PROCEEDINGS.

THE NEW YORK COUNTY MEDICAL SOCIETY.

Stated Meeting held February 22, 1897.

The Vice-President, ROBERT A. MURRAY, M.D., in the Chair.

THE DIAGNOSIS OF MALARIA.

WILLIAM OSLER, M.D., of Baltimore, read a paper with this title. (See page 289).

DISCUSSION.

DR. WALTER B. JAMES said that he thought most physicians in this section of the country would agree with Dr. Osler that malarial fevers were fairly typical, and easy of recognition, even without the aid of the microscope. He had examined the blood of many patients in this city, since the time of Laveran's discovery of the plasmodium was proved to be correct, and he had come to the conclusion, as a result of these studies, that malaria, originating in New York City, was rare. Since he had relied upon this method of confirming the diagnosis of malaria, the cases of malaria had become much fewer. They usually originated in some other locality than New York City, or beyond the thickly settled portion of the city, or on some ground floor, or in a house near some extensive excavation. He had never found the parasite of the irregular or remittent malarial fevers in an individual whose history indicated that the disease had been contracted in this locality. He had found this parasite in a fair number of cases among sea-faring persons, and others who had most probably contracted the disease in other regions. His observations indicated that we had to deal here almost exclusively with the tertian parasite, or that form of the disease which is most easily recognized.

He wished at this time to say a word in favor of the old-fashioned clinical method of diagnosticating malarial fever, for it had seemed to him that the finer methods of diagnosis had somewhat blunted our other powers of observation. In his opinion, a careful study of the clinical aspect of almost every case of malaria in this city would result in a trustworthy clinical diagnosis. The absolute recognition of the parasite in the doubtful cases must be entrusted to the "malarial *expert,*" for it must be rare to find a general practitioner whose training and experience had been sufficient to make him competent to establish the diagnosis in the *doubtful* cases—in other words, in just those cases in which the question of diagnosis assumes unusual importance.

DR. A. JACOBI said he agreed with the last speaker that in many cases the diagnosis could be made without recourse to the microscope, but the microscopical test was of much value, and it should not be forgotten that the best clinicians throughout the world had been exceedingly glad to be able to appeal to the microscope for a confirmation of the diagnosis of malaria.

As to the diagnosis, he would say that it was rare to find diseases in which there would be such a high elevation of temperature as in malaria, although, of course, at the beginning of a pneumonia or a tonsillitis such might occur. Again, he knew of no other disease in which the swelling of the spleen was so considerable as in malaria. When the spleen could be distinctly felt below the free border of the ribs within a few days, the probability was that the disease was malaria, and not typhoid fever. Ehrlich's diazo-test, it was true, was also observed in pneumonia, acute miliary tuberculosis, and other diseases, but in a great many instances he had found it serviceable for differentiating between malaria and typhoid fever in very doubtful cases. As a rule, he had not found the maroon discoloration that was observed in typhoid fever from the fourth to the fourteenth day. In cases of auto-infection, which might be conveniently termed "intestinal fever," there was an irregular fever which, in children, might last for a number of weeks. This affection was frequently mistaken for typhoid fever, and not infrequently for malarial fever. It was a common affection here, where children were habitually overfed. In this affection there was usually only very slight swelling of the spleen. Its true nature was to be determined by watching the effect of a good purge and a restriction of the diet. In some cases of acute rachitis there would be found a fever presenting some of the features of malaria; indeed, a few very excellent clinicians had been led into error in this way. At one time he had seen here a number of cases of malaria originating in South Brooklyn, before that portion of the city had been properly sewered. In these cases, the prostration was very marked and persistent, and a distinct paroxysm of ague often failed to develop for a long time. He had noticed, however, that after the first dose or two of quinin it was not very unusual for a severe paroxysm to occur. On pushing the remedy, improvement would be noted, and convalescence would soon be established. This rather remarkable phenomenon had puzzled him a good deal at the time. He had since endeavored to explain it by supposing that the administration of the quinin at first had caused a contraction of the spleen, and that the constant return to the circulation of a number the malarial organisms had resulted in the development of the ague paroxysm.

DR. E. LE FEVRE said that he had made quite an extended study of malaria at Bellevue Hospital. The microscopical examination in the large majority of cases showed single or double groups of the tertian type. Two cases of the pernicious type had been admitted to the hospital with a diagnosis of apoplexy. One of these patients was an old lady, and the correct diagnosis had only been made in her case after finding a large number of the malarial organisms in her blood. She had had a continuous temperature of 104°, F., according to the records of another hospital, for some little time previously. The organisms disappeared rapidly under the use of quinin. The other case was that of a man who lived on the fourth story of an apartment house, and apparently under perfect sanitary surroundings. As far as could be ascertained from the history, this case had developed in New York City. His experience had been that quite a number of the cases had developed in the southern part of this city. Eleven of the cases had presented types of plasmodium that he had been unable to classify. In only a small percentage of the cases had it been possible to feel the spleen below the free border of the ribs.

DR. S. BARUCH said that having been at one time a resident of the Southern States he had had extensive experience with true malaria. He regarded the diagnosis of malarial fever as more easily made than in any other disease. He depended more upon the temperature than on any other sign. It was not the height of the temperature so much as the difference between the temperature at the beginning of the paroxysm and that at its acme. Such large excursions of temperature were not observed in any other common disease. It was, however, observed sometimes in gall-stone fever and in ulcerative endocarditis. One observer had noted the occurrence of a similar fever in those addicted to morphin. In his experience, splenic enlargement had been so infrequent in the early stages as to be of little importance in making the diagnosis.

Mention had been made in the paper of the large number of recorded cases in which malaria had been alleged to be the cause of death in this city and Brooklyn. In a paper published by him in 1881 he had directed attention to this subject, and had shown that out of 130 reported cases of this kind, careful inquiry had shown that in only thirty had the physicians who had thus signed the death certificates been willing to state positively that, in their opinion, malarial fever had really caused death.

DR. OSLER, in closing the discussion, said that his statement regarding the number of reported fatal cases in this section of the country had been founded on the figures given in the United States census for the six years ending in 1890. According to such statistics, the mortality from malaria was simply appalling, but in all probability nearly all of these cases were really typhoid fever. He had taken pains to make inquiry in both New York and Brooklyn, and had learned that fatal cases of malaria were exceedingly rare in those cities. The sooner the physicians of the North learned that north of the Chesapeake death from malarial fever was exceedingly rare, the better for the accuracy of our statistics. He could not agree with those who had stated that splenic enlargement was rarely observed in the early stages of malaria. If the patient were placed on the side, and the hands used to push the spleen up toward the palpating finger, there would be little difficulty in most instances in feeling the enlarged spleen. The clinical diagnosis of ordinary malaria was exceedingly easy; it should be possible to make it in about nineteen out of twenty cases from the facies alone, after the affection had lasted for a week or ten days. The fresh, or untreated cases usually gave a very distinctive paroxysm. The height of the fever was certainly an important factor in the diagnosis. It should be recognized that the irregular type of fever might produce a definite and specific fever, and the paroxysm would be found different from the other form. In these exceptional cases, the temperature curve was very much longer. He had seen two instances in which the fever in a morphin habitué closely resembled malaria, but in these cases no malarial organisms were found.

In conclusion, he would say that malarial fever was a very rare disease north of "Mason and Dixon's line"—except in the heads of the doctors.

REVIEW.

THE ETIOLOGY, SYMPTOMS, AND TREATMENT OF GALL-STONES. By DR. J. KRAUS, SR., of Carlsbad, with additional remarks on Operative Treatment by HENRY MORRIS, M.B. (Lond.), F.R.C.S., Surgeon to the Middlesex Hospital. London: Kegan, Paul, Trench, Trübner & Co., 1896.

THIS little book, a translation by the author of his "Beitrage zur Pathologie und Therapie der Gallensteine," offers a clear and very readable account of the troubles caused by gall-stones, and their treatment. Written by a physician at Carlsbad—that Mecca of gall-stone sufferers—we are not surprised to find therein an excellent account of the disease. The author discusses the morphology of gall-stones, their etiology, symptoms, diagnosis, prognosis, and treatment. Dr. Kraus lays considerable stress on what he calls the "prodromal state of cholelithiasis," and expresses surprise at finding so little mention of it in literature. He deplores the fact that so few patients come under the physician's care during this stage. Kraus is a firm believer in the virtues of Carlsbad in the treatment of gall-stones, but declares that a course of the waters at home, if properly used and directed, would meet with the same success as at Carlsbad itself.

Mr. Henry Morris contributes a short account of "The Surgical Treatment of Gall-stones and the Complications Arising from Them." According to Morris, aspiration of the gall-bladder with trocar and canula should never be attempted. To any one who desires a clear and concise account of the subject, we recommend this little volume.

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ORIGINAL ARTICLES.

THE SIGNIFICANCE OF PAIN.

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SECOND PAPER.

PRESSURE PAINS, as their name implies, are due to the encroachment of tumors, abscesses, aneurisms, or other causes of direct pressure brought to bear upon nerves anywhere along their course. Their chief characteristic is that they are essentially continuous. Though these pains may be aggravated into paroxysms of greater or less severity, yet they differ altogether from the large class of neuralgic pains with which they may be confounded by the fact that they never wholly intermit. There always is some uneasiness left at the seat of the pressure, however much the pain has lessened in degree. The reason why they are mistaken for neuralgic pains is because they do not show the character of inflammatory pains in being increased by pressure or movement, or by producing muscular stiffness, except sometimes abdominal muscular rigidity in the case of gastric or pancreatic tumors. We always, indeed, have reason to suspect that a fixed or stationary pain is something more than functional, and most likely due to an organic mischief, however hidden that may be. On the other hand, pressure pains may present a seeming resemblance to inflammatory pains when the pressure mechanically interferes with the function of the parts or organs implicated. Thus in brain tumors or abscesses the small room in the cranial cavity for any displacement may cause many symptoms of functional disorder of the brain to accompany a pressure pain there. Except in the case of brain abscess, however, the absence of fever and of other accompaniments of inflammation will ordinarily suffice to indicate the true nature of the pain. In other parts of the body the disturbance of function caused by pressure is different from that caused by inflammation, in that the function is embarrassed, rather than excited, while the pains are evidently not so closely connected with the functional actions themselves as they are in inflammation.

Pressure pains are apt to radiate more widely than any other kinds of pain when the pressure involves large trunks or plexuses of nerves. They differ in such cases from radiated inflammatory pains in their greater variety of range. But however far they may travel, they are always characterized by having a central focus or headquarters where pain is never absent and to which they can be traced. A careful examination then will show that whereas pain is constant at the original focus, those which radiate from it, though they may seem much more severe, yet are quite subject to variations. Thus, years ago, a phthisical patient of mine began to have agonizing pains in his legs, which he very distinctly referred to both sciatics. At first I was deceived into treating him for sciatica by vigorous local measures, including the actual cautery. In time I found that his sciatic pains were too paroxysmal and shooting in character to correspond to local neuritis, and, moreover, that the characteristic tenderness on pressure along the course of these nerves if inflamed was not, in him, at all well defined. Meantime he had a fixed pain in the back, just above the lumbar vertebræ, nothing like as severe as in the legs, but nevertheless both uniform and persistent. Months passed, and then the development of a soft swelling divided by Poupart's ligament in his right groin explained everything as due to the progress of a psoas abscess. I have always since searched for the abiding places of pain, no matter what its excursions might be.

When a tumor involves in its growth the trunk of a nerve, it sometimes causes trophic changes at the peripheral distribution of the nerve on the skin in the form of an intractable ulcer, or as an herpetic eruption followed by persistent local anesthesia.

Painful cramps are a variety of pressure pains. The cramps are always of reflex origin, and when persistent the tonic contraction causes much wasting of the implicated muscles. We have in the persevering use of the warm-water douche a specific remedy for both this pain and the muscular contraction which causes it. Pressure pains in general are much less under the control of opium than inflammatory pains. The pains soon get used, as it were, to the opium, and we have to increase the dose to get the desired effect. On the other hand, antipyrin, phenacetin, and the other coal-tar derivatives are often of considerable service, either combined with an opiate or with bromids. This is especially true in pains caused by aneurisms.

Stretching Pains.—The peculiarities of stretching pains are well illustrated during the passage of a calculus through the bile duct or the ureter; also, in severe sprains. More than any other pains, they, when severe, cause great faintness, nausea, and vomiting, often with chills and cold sweats. Unlike either inflammatory or pressure pains, their onset is usually sudden, and in the stretching of narrow ducts painful spasms in them so commonly develop that the attacks have a pronounced paroxysmal character, whence the name "colics" is derived. The sufferers show plainly enough by doubling themselves upon the affected part or by firmly pressing their hands over it that the pains are not inflammatory. Meantime the characteristic radiations of the pains are of much diagnostic value in distinguishing either hepatic or renal colics from each other and from other painful affections in the abdomen, being in the hepatic variety from near the umbilicus directly through to the back and upward between the scapulæ, and in the renal from the back down the groin, with retraction of the testicle, and radiated also to the inner aspect of the thigh. In sprains, at the onset there occurs a marked superficial tenderness of the skin, which, however, passes off in a few hours, but which may serve, at the ankle, for instance, to show that the injury is a sprain rather than a fracture. The pains of so-called myalgia, so common in women with feeble muscular development, felt at the attachments of the abdominal muscles to the ribs or along the attachments of the erectors of the spine, are virtually stretching pains due to an undue pull upon tendinous textures from deficient muscular support. Cutaneous hyperesthesia, therefore, is very common at the places where the pains are most felt, and the patients often complain of the wearing or exhausting nature of these pains, which, moreover, show that they are not properly neuralgic, from their having no tendency to shift. In the treatment of biliary or renal colics, the first indication is to prevent the spasms which induce the paroxysms of pain, and, moreover, hinder the onward passage of the calculus. This is best done by arresting the afferent impression of pain which evokes the motor effect of spasm, and we have nothing like a hypodermic of morphin, with atropin, for accomplishing this purpose. Next follows the excito-motor paralyzer, warm water. In biliary and renal colics the sudden cessation of pain generally indicates that the calculus has passed out of the duct, and hence is much more reassuring than sudden cessation of a severe inflammatory pain, for that may mean that gangrene has supervened. Sprains are best treated by douches, of hot water when acute, of cold when chronic. Local applications of belladonna or of stramonium ointments or liniments, with the addition of chloral, may relieve better than the lead-and-opium lotion so useful in inflammations. For the same reason belladonna plasters are beneficial in spinal myalgia. In myalgia, however, the first indication is to develop and strengthen the muscles by massage, or by alternate exercise and rest, combined with the great restorer of weakened muscles, the oxygen of the open air.

Neuralgic Pains.—There is no term which needs definition more than that of neuralgia. Etymologically, it may apply to any pain in a nerve, and hence we find it given to the most diverse kinds, from tic-douloureux to the pains caused by tumors. It ought to be cleared of all such vagueness of meaning, because true neuralgic pains have a wholly different causation from either inflammatory, pressure, or stretching pains, and hence demand different treatment. Thus, in the first place, they present none of the signs of inflammation, no rise of temperature, no swelling or local infiltration, no objection to pressure, but the reverse, likewise none to movement, but often here also the reverse, and they are not accompanied by any characteristic disturbance of function in the parts which they affect. On this account we would not include among the neuralgias typical cases of tic-douloureux, or the so-called trigeminal neuralgia, because in this affection the paroxysms of pain are particularly excited by the functional movements of the facial muscles, such as in chewing, opening the mouth for speaking, or even by the movements of facial expression or emotion, etc. Moreover, whenever the affected branches of the trigeminus are superficial enough for us to press upon them we find them exquisitely tender, as at Valleix's points. The view that this affection is a true neuritis of the *nervi nervorum* has much in its favor, and the effects of treatment further confirm this supposition. The same may be said of most cases of so-called brachial neuralgia, where the arm has to be kept as still as the leg in sciatica to prevent the paroxysms of pain. Likewise most cases of "cervico-occipital neuralgia" are really cases of neuritis, and should be treated accordingly.

Unlike inflammatory, pressure, or stretching pains, neuralgic pains are much less local, and many of them are prone to wander about. This feature alone may serve to demonstrate their nature, for frequently they shift their seat altogether, wholly disappearing from one locality to develop with just the same symptoms and severity in quite another part. In this respect they are readily distinguishable from the pains which radiate from an inflammatory or pressure focus. The grand distinction of neuralgic pains, however, lies in the significant fact of intermittency. Neither an inflammatory, or a pressure, or a stretching pain can intermit; they can only remit, or else cease with the cessation of their cause. Neuralgic pains, on the other hand, come and then go entirely, leaving the patients as free from them, temporarily at least, as if they had never experienced them. No one, for example, can foretell that the vivacious lady whom he meets in company will be entirely prostrated the next day with a severe sick-headache, and then two days afterward be as free from it as ever. This fact about many neuralgias is very suggestive of their toxic origin, for it is only in chronic toxemia that we have similar cumulative results leading to nervous explosions, so to speak, as, for instance, uremic convulsions or attacks of gouty asthma.

We would divide neuralgic pains into the febrile toxic, and non-febrile toxic. Examples of the first are found in the aches produced by the poisons which cause fever. Frontal headache, lasting for more than twenty-four hours, and accompanied by a rise of temperature, with a general aching in the back and limbs, should lead us at once to suspect a febrile infection. If it lasts three days or more, it must be due to such a cause. These pains are in no sense inflammatory, for they cause great restlessness, the patients tossing about in bed on their account, and not on account of the fever. Though in most specific fevers these headaches last longer than most neuralgic pains, yet they always cease before the fever ceases. The best medicinal remedies for them are phenacetin with ammonium bromid, or, in epidemic influenza, phenacetin with aconit and a small dose (one grain) of Dover's powder. Also, cold applications to the aching head are often very grateful.

The second class of toxic neuralgias are the non-febrile, of which a good example is found in the truly periodical neuralgias, or those which come on at definite times of the twenty-four hours, and then subside like an attack of ague. It is natural, therefore, to surmise that they have some connection with malarial infection, but in many cases this is not plainly demonstrable, and, moreover, notwithstanding they may be very severe, they most commonly are not accompanied by rise of temperature. They may attack the head, the sides of the chest, or abdomen, or be located anywhere along the spine or in the pelvis. I have not met with more violent cases of pain than in some of these patients whom I have seen both in my own practice and frequently in consultation. In the latter cases I have learned that quinin, Warburg's tincture, arsenic, and the coal-tar analgesics had been previously administered, often in heroic doses, without any effect toward preventing or mitigating the attacks, and hence I am glad to say that I consider ergot in full doses to be a true specific for periodical neuralgias, whatever their seat be. A drachm of the fluid extract should be taken every two hours, with a drachm of elixir of cinchona in water to prevent nausea. If the stomach does not tolerate the ergot it may be administered per rectum in two ounces of water. The first dose should be taken at the very beginning of the onset of the pain, and if that suffices to arrest it a second dose is not needed, but with some it requires three doses. It is curious that in many cases I have found that twelve grains of quinin will cinchonize patients who have just taken ergot when doses of thirty grains taken before had not done so.

Migranous headaches I regard as essentially toxic in their origin and due to perversions in gastro-intestinal digestion, causing absorption into the blood therefrom of poisons which at a certain point of accumulation bring on the attack. Like gouty or lithemic derangements, they are very commonly due to constitutional or hereditary tendencies. Ergot is here also a specific for the attacks themselves, administered as above recommended for periodical neuralgias, but in many cases we may succeed as well with ten or fifteen grains of antipyrin and a teaspoonful of aromatic spirits of ammonia, taken early with the first symptoms, when the patient should at once lie down, and then repeat the dose in two hours if required. But the true treatment of migraine is prophylactic, by a prolonged and systematic course of intestinal antiseptics.

Patients with a persistent rapid action of the heart, without fever and without cardiac or renal disease to account for the tachycardia, are very commonly great sufferers from neuralgic pains in the various parts of the body. This is well shown in many cases of Graves' disease, both before and after the development of thyroid symptoms, but such neuralgias may be equally present in patients with such tachycardia who never show either exophthalmia or goiter. Here intestinal antiseptics, such as weekly mercurial purgation, perseveringly followed up by phenol or naphthol bismuth, bismuth salicylate, strontium salicylate, salol, etc., and total abstinence from butcher meat, taking milk instead, will cure both the neuralgias and the over-action of the heart.

Gastric acidity is apt to produce frontal and temporal headaches, while occipital headaches, accompanied by tenderness on pressure upon the eyeballs, are distinctive of intestinal fermentation. In some cases severe attacks from like causes take place in the stomach, which go by the name of gastralgia. The relief following upon the administration of $\frac{1}{20}$-grain doses of arsenious acid in gastralgia would seem to indicate its causation, for arsenic very quickly arrests any form of fermentation.

Under the head of non-febrile toxic neuralgias would come those occasioned by chronic metallic poisoning, especially that by lead, in which wandering pains occur which are apt to be mistaken for rheumatism, though undoubtedly they have more relationship to gouty neuralgias, as lead poisoning is one of the recognized causes of the gouty state. On the other hand, the abdominal cramps are just as specific effects of plumbism as its special paralyses are. Lastly, among these non-febrile toxic neuralgias we should not forget those due to Bright's disease and to diabetes. Pain in the back of the head is common in Bright's disease, and is not necessarily of dangerous import. Not so, however, when general pains are complained of in every part of the body, for these may presage a near fatal issue, as their frequent association with convulsions shows. On the other hand, the local pains occurring in diabetes not infrequently are due to actual neuritis.

The third class of neuralgic pains are the non-toxic. They sometimes appear to be purely reflex, as, for example, a true trigeminal neuralgia caused by a necrosed piece of bone in the nares and which is cured by its removal. Under this class also come headaches from eye strain, about which we hear so much. Of one peculiar form of headache I have met several instances. The ache seems to begin at the root of the nose, and pass horizontally backward to the occiput. It is always aggravated by prolonged bending forward of the head, as in writing, etc., and has a special tendency to cause incapacity for mental exertion. In each of my cases it was found associated with a nasal obstruction from old fractures of the nasal bones, and the headaches were cured by operation.

One important form of neuralgic pains of a non-toxic character are those due to degenerative processes set up in sensory nerves and nerve-roots, such as the lightning pains of tabes. The degenerative processes themselves may have been due originally to a toxic infection, such as syphilis, but this no longer operates as a cause of the pain. That these pains are not peripheric is shown by their contrast to the peripheric pains of tic-douloureux, for in the latter the peripheral nerves are exquisitely tender, while in tabes the skin area of distribution of the affected nerves is anesthetic. The patients rub, seize, or grab the affected part as if they were desperately bent on arresting the pain in its flight. For the pains of tabes the coal-tar analgesics are often very effective, particularly acetanilid. Nitrate of silver also often affords decided relief, and it is curious that this drug will sometimes unmistakably mitigate pressure pains caused by a tumor involving the roots of a spinal nerve, as I have had occasion to note in several instances.

I surmise also that the rapidly fatal form of angina pectoris is likewise due to degenerative disease of the intrinsic cardiac nerves. Some writers seem inclined to merge this most specific disease of angina pectoris into a mere general symptom, and to confound with it all forms of cardiac pains not due to inflammatory processes. Thus the paroxysmal anginose pains in a case of combined aortic stenosis and incompetence are pronounced indistinguishable from those of angina pectoris. Let the mitral valve, however, begin to leak also in these cases, and so relieve the intraventricular pressure, and the pains vanish altogether. I cannot but regard them, therefore, as wholly analogous to the cardiac pains in patients with general arterio-sclerosis and high-tension pulse, and which are brought on by overwork of the heart muscle, just as cramps may be induced in the calves of the legs by too prolonged dancing. But the clinical histories of typically fatal attacks of angina pectoris are totally different. Thus one of my patients who had never experienced a single symptom of heart trouble before, was suddenly attacked on waking in the morning, while resting quietly in bed, with the first pang, which so terrified her with a sense of impending death that she sent for me. I saw her three hours afterwards, when she was quite free from pain, and when she gave me a most intelligent account of it. I advised her to remain in bed, and left a prescription for amyl nitrite, to use in case of a return of the pain. Ten minutes afterward she suddenly died. Another was a gentleman who, without any previous warning, was first seized with a short paroxysm while talking to a friend. I saw him soon afterward, and his description of the attack left no doubt of its nature. Ten hours afterward he had a second attack, and died instantly. Now, these cases, and others just like them, in my experience, have this feature in common: that the patients had had no symptoms whatever referable to the heart before these capital ones, and therefore are no more to be confounded with the every-day cases we meet of anginose pains from cardiac inability to cope with the task of the circulation than the muscular movements of epilepsy are to be confounded with those of chorea. A painful cardiac affection which has often visited a patient, especially after exertion, may at any time suddenly end his life, but its repeated visits and their connection with causes of circulatory strain point more to disorders of a muscular kind in the heart than does this dread malady which needs strike only once or twice. In the second case, just related, the most careful macroscopic and microscopic examination of the muscular and vascular textures of the heart failed to show any deviation from health. I regret that our modern methods of examination of nervous tissues were then not known, for I think that the cardiac ganglia might have shown degenerative changes which would justify us in speaking of "cardiac crises" as we do of gastric or laryngeal (bulbar) crises in tabes.

Anemia is often stated to be a cause of neuralgia. I would rather say that neuralgic pains are very common in anemic patients; but that anemia *per se* causes neuralgia I doubt, because of its frequent absence in many of the worst cases both of primary and of secondary anemias. Thus I have met with instances of pernicious anemia in which there was no neuralgia complained of from the beginning to the fatal end of the disease. On the other hand, blood impoverishment is often the direct result of the toxemias, which also cause toxic neuralgias, and hence I would paraphrase the saying that "neuralgia is the cry of the nerve for more blood" into a cry for purer blood. Iron, cod-liver oil, etc., are good remedies in these cases by improving that general nutrition, which is nature's most effective antiseptic.

Subjective Pains.—In a sense all pains are subjective, for if by severing the nerves we interrupt the conduction to the sensorium of the severest inflammatory or pressure pain, there will then be felt no pain at all. But as the sensation of pain itself is a centric function, why may its origin not be in a disturbance of the pain centers themselves without an antecedent peripheric irritation? Certainly we must admit that, for example, in many cases of hysterical hemianesthesia this sensory derangement evidently starts from a cortical area, but if so, then a hyperesthesia amounting to severe pain is just as likely to own a similar origin. I have no doubt that this is sometimes the case also in patients who cannot properly be termed hysterical, but who are said to have a highly nervous organization, and in whom some violent attacks of pain are brought on by strong emotion. The cerebral relations of these pains, however, make them so likely to be influenced by purely cerebral states, being often both induced and removed by mental impressions alone, that we are apt to regard them as more or less imaginary. This, however, is a less common mistake now than formerly, as the pathology of hysteria itself is becoming better understood. A motor paralysis of hysterical origin is as real as any other paralysis, as in the case of a motionless vocal cord in hysterical aphonia, where, of course, the patient knows nothing about the paralyzed part which she has never seen. Likewise hysterical pains may be as unimaginary as such motor derangements are. Owing, however, to their cerebral origin, they are far more intimately associated with mental or emotional states than is possible with any other class of pains. The patients think them, so to speak, as much, if not more, than they feel them, and so are often led to refer them to any part of the body by simple mental suggestion, or what amounts to the same thing, forgetting one pain while their attention is directed to another. Hysterical pains, therefore, may simulate all varieties of pain, one after the other, in such succession that a beginner in practice may be much puzzled by them, especially when complained of about the joints or in the abdomen. Hence, a careful observation of the mental accompaniments of the pain is the surest way to arrive at the diagnosis of its hysterical nature. Thus real objective pains are very concisely described, with a few characteristic gestures and equally few words. Subjective pains, on the other hand, are described with many a theatrical gesture and with a copious variety of terms, which all go to show how much the patients occupy their minds with dwelling upon them. This of itself is enough to strengthen the presumption of their subjective character, for objective pains always inhibit both thought itself and its expression. The description of a lively disturbance in the great toe by gout is generally limited to interjections or expletives, while, on the contrary, the hysterical patient seems to enjoy talking about her unexampled sufferings by the hour, especially to a sympathetic listener. The treatment of hysterical pains is to be that of hysteria itself. Nothing is more useless or mischievous than to relieve them by anodynes, and particularly by opiates.

Cutaneous Reflex Pains.—Dr. Henry Head, Registrar of the London Hospital, has directed the attention of the profession to a very interesting class of pains which are elicited by lightly pressing the skin, or touching it with the head of a pin. Nothing therefore could be so extremely peripheral as these pains, but their interest lies in the fact that only deep-seated visceral disease will cause them. When these pains are produced by the light application of a large-sized pin's head, the patient not being allowed to see it done, they are complained of as a burning or smarting sensation, which when pronounced leads the patient to beg that the experiment be not repeated. I have myself repeatedly confirmed this curious phenomenon. Thus a man with a calculus in the left kidney always swore when the pin's head touched the tip of the left twelfth rib. The special interest of Dr. Head's researches lies in his demonstration of the definite limitation of the cutaneous areas of these pains to the distribution on the skin of nerves associated with the nerves of corresponding internal organs. This distribution is not according to the segmental distribution of the spinal nerves, but according to certain definite associations of nerves which are curiously illustrated by the eruptions of herpes zoster, which Dr. Head shows, correspond to the different cutaneous areas of reflex hyperesthesia in organic visceral disease. Thus I found in a patient with gastric ulcer these well-marked cutaneous pains over the ensiform cartilage, at the junction of the eighth rib with its cartilage, and in the back on a level with the angle of the scapula. Dr. Head has mapped out a most elaborate delineation of the areas on the skin, in which, if these pains are present, we may thus diagnose from what internal viscera they proceed, but we cannot more than allude to them here on account of the need of constant reference to his charts to illustrate the statements which he makes. In trying, however, to verify these observations myself, I have found that when these pains are present in the specific localities which he describes, they afford very valuable indications, but their absence is no proof whatever of the absence of organic visceral disease. Thus, only about one out of eight cases of undoubted ulcer of the stomach showed these painful skin symptoms, and then not unless the local pain in the stomach itself was well marked. Similarly in heart disease, aortic aneurism, and other internal affections, the pain thus reaches the skin only when it first has been severe within. Nevertheless, it is a very suggestive subject and merits further investigation, not only for the aid which it may afford in the diagnosis of internal organic disease, but also in the relation of many pains about the head which have been classed as local neuralgias, but which may thus be shown to be associated with definite disturbances, sometimes functional as well as organic, in the thoracic and abdominal viscera.

THE DIFFERENTIAL DIAGNOSIS OF "NEURASTHENIA" AND ITS TREATMENT.

BY ELMORE S. PETTYJOHN, M.D.,
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EVER since Beard used the term "neurasthenia," and Van Dusen directed attention to a group of symptoms so named, the profession has been struggling to settle upon a definite set of symptoms to be thus classified, and, in my opinion, has as yet but poorly succeeded. Althause of London protests against the term, and Gowers says that "nervousness" covers the conditions. Different writers give different illy-defined symptoms, and subdivide them as being of cerebral and spinal origin, some even finding varied local conditions which they denominate neurasthenia. There is one thing they all agree upon: that this group of symptoms indicates disease of some or every part of the nervous system, or a marked defect in the nutrition of the cerebro-spinal axis, giving an almost endless variety of symptoms most difficult to classify.

The changes noted in the patient come on gradually. There is exaltation and depression in alternate waves, each change lasting from one to three weeks, and often being poorly defined; a morbid watching of himself regardless of the experience of others; a disinclination to see a physician; the firm belief that he will not recover; lack of desire for occupation; lack of ambition; nervousness in the presence of others, and avoidance of society. He has a tired feeling, or at least the absence of the feeling of conscious well-being, and disturbance of vision, insomnia, and loss of power to direct attention to anything for any length of time. In nearly every case some delusion will be found referable to the region of the spine or chylopoëtic system, or an unreasonable belief that there is some morbid condition of the body which no one can understand or explain. Society and the members of his family are repulsive to him. As one set of symptoms of an exaggerated or depressed condition of things disappears another takes its place, until almost the whole curriculum of symptomatology is manifested. Nervousness, weakness, insomnia, headache, neuralgia, vertigo, exaggeration, and depression, with local anesthesia and hyperesthesia over the spine (more frequently the latter), and the multiplied expressions of the disturbance of the integrity and equilibrium of the nerve centers may be met with.

The appetite is poor, the tongue coated, the breath fetid, the bowels constipated. The skin is dry or excessively moist, with lessened reaction after cold bathing. Sleep is broken, and even if the patient sleeps a sufficient number of hours, he is not refreshed. He is over-sensitive to noise and cannot endure even rhythmical sounds. He is nervous and restless, and the little things that were formerly unnoticed are now very annoying and burdensome. He is excessively fastidious as to cleanliness of person and surroundings. Instead of appearing anemic, the patient is as often of full habit and has a ruddy color, the number of blood corpuscles and the hemoglobin being normal, as demonstrated in a large number of cases I have examined. The urine is of low specific gravity and contains a large amount of phosphates and oftentimes some sugar or albumin. In some cases we find a combination of all these elements. If the medulla is affected we almost certainly find sugar and, if impaired kidney-nutrition, we would find albumin. All this means that from lack of eliminative power the system reabsorbs from the blood its own ptomains and there occurs a form of auto-intoxication which, leading to or combined with malnutrition and expenditure of nervous force, produces this morbid state of the entire system.

These conditions must be distinguished from those found in the uric acid diathesis, with which many of these symptoms are associated. The whole train of symptoms is born of a lack of physical nutrition, and there is not one detail in all this varied category, so-called neurasthenia, which does not belong to and cannot be classified as hysteria, hypochrondriasis, or mild melancholia. Anemia of the cerebral cortex undoubtedly exists in these cases, although degenerative changes occurring in the vessels of the cortex from excessive use of alcohol or from specific infection may often present the same symptoms and the diagnosis is made only under treatment. Neurasthenia may be a convenient term with which to mollify the friends of the patient, but neurasthenia, as a distinct affection, in my opinion, does not exist. It is a popular term among the laity, and many a young woman has become a useless thing in the world of action because she thinks she has neurasthenia, or, as later termed, "Americanitis," which name I utterly repudiate. It is a matter for consideration as to how much physicians are to blame for encouraging this popular delusion, and whether we may not some day, on this very account, be accused of nursing patients instead of placing a veto on the laity-born, self-perpetuating fad, and letting firm-willed training-school graduates do the nursing. I believe we are to-day on the verge of a revision of our nosological nomenclature, and that diseases will hereafter be classified in accordance with their essential producing causes and not according to their symptoms. When this comes to pass the term "neurasthenia" will become extinct.

We are not content with the knowledge, secure or insecure, that we have gained, and while using it as best we may for the good of humanity we realize in all humility how much there is we cannot know, yet cannot doubt. Shakespeare asked, "Who can minister to a mind diseased?" I answer, "No one," but we can minister to the body and brain diseased, and that right well.

Omitting the etiology of these conditions of the nervous system in reference to congenital physical defects, and the effect of the toxic matter of alcoholic or specific origin, I believe these abnormal states may be expressed in one word, "Malnutrition," and, in turn, that this condition of the body is chiefly due to the lack of equilibrium between elimination and repair.

A continual procession of non-viable atoms is constantly penetrating living molecules where they are themselves converted into living molecules by assimilation, that undiscoverable power of living matter. Each complex living molecule by varied processes of endosmosis, exosmosis, and the chemical reactions with oxygen and other gases, is reduced to a dead or useless condition of matter, which is then eliminated to make way for the ingestion of other new nutrient atoms. *The systematic repetition of these processes is life and health.* When we stop dying (eliminating) we cease to live. While in health, so far as consciousness registers, these two processes are simultaneous; in a pathologic state of the body that is to be treated we would place elimination before repair. In a sound body there is a *complete balance of this double process of nutrition,* but when the equilibrium of exchange in these molecules of living matter is disturbed in nerve, muscle, or blood corpuscle we have a functional disorder, which, if continued, eventuates in a pathologic condition. To produce, or aid in producing, this double process and re-establish its balance is rational medical treatment. The alchemists believed that if some agent could be found to fix or crystallize the tissues in their full growth and vigor, decay would be impossible and youth would be eternal. We know that health is incessant change according to laws of metabolism, and that the extension of the period of vital energy, the expression of health, can only occur by that fine balance of waste and repair we call good nutrition.

I would mention treatment under three heads—elimination, food, environment. A systematic, scientific course of hydrotherapeutic treatment in addition to medication is, in my opinion, essential to the best results in these cases, particularly with reference to elimination through the skin. This is obtained by Turkish, electric, vapor, hot mineral, or fresh water baths (always with cold to the head), combined or alternated with wet hand, alcohol or oil rub, and faradization. All these treatments should be given by a trained nurse under direction of the attending physician. They may be given at the patient's home if he will take the trouble to attend to the details, and if the doctor gives explicit directions and instruction. If the patient is strong enough the entire body may be douched with cold water twice daily, provided a good reaction occurs, to stimulate the nerve centers to the greatest activity. The hot bath determines the blood to the surface by temporary inhibition of the vasomotor system dilating the capillaries, withdrawing the blood from the deeper tissues, causing perspiration and elimination direct, and at the same time temporary exercise and increase of nutrition of the skin. Rubbing is skin massage, faradization is a skin stimulant, both of which are exceedingly helpful aside from their soothing effect on the patient. I do not now speak of the induced current with the Tripier apparatus which affects the muscles and deeper tissues.

For elimination through the kidneys I prescribe a glass of some mild alkalin water agreeable to the stomach on arising, at 11 A.M., and 4 and 9 P.M., using in all eighty ounces of liquid daily, exclusive of that taken with the food. If the solids are in excess and the amount of urine is scant, I direct, in addition, that a pint or quart of ozonated lithia water be taken daily. A tenth-grain calomel tablet triturate at night and a salin laxative in the morning are given regularly as needed. Recumbent rest and active exercise are definitely prescribed in frequent alternations for every day with methodical regularity. Passive and resistive manual movements are ordered, and those of mechanical movement applicances also, when available. Walking, running, horseback-riding, cycling, tennis, or ball playing, or gymnasium practice, after anthropometric examinations, are prescribed. When the patient is too weak to be out of bed the induced current and massage are employed, the patient taking one treatment of each daily, properly graduated, in addition to some light form of hydrotherapeutic treatment. For stimulation of the nerve centers a hot fomentation to the entire spine, or the alternation of the fomentation and ice to this entire region, produces admirable results. The cold head bath with heat to the stomach, liver, and extremities, reduces cerebral congestion and determines the blood to the central organs, and is employed when advisable. The ice bag to the base of the brain is a better sedative than drugs. Wholesome, nutritious food should be taken at regular intervals of six hours, (during the night also if awake) in large quantities, whether or no there is an appetite. Appetite I believe to be largely a mental condition. Stimulating broths, but not solid food or milk, should be given between the intervals of regular meals. The stomach of even a sick person should have some rest. If there is difficulty of digestion the stomach contents should be examined and the lacking digestion factor should be supplied.

The patient's environment should be pleasant, agreeable, and often unhomelike. He should be mentally diverted and occupied, and at the same time he should be encouraged to make some effort to forget himself by thinking of something else, and taking an interest in others. The removal from care and responsibility, change of occupation (not idleness, though no set heavy tasks requiring much mental effort), living away from home and business scenes where association of ideas will bring a return of the morbid thoughts, are *essential* aids to recovery. Very many things can be done besides watching and feeding the patient. With the daily oversight, care, and direction of a physician experienced in the treatment of these cases, and the above indications intelligently carried out, the great majority of this class of patients, both chronic and acute, will recover, and many men and women will be saved from a life of misery and insanity in the present and in the coming generation.

THE PHYSIOLOGICAL ACTION AND THERAPEUTIC USES OF YEAST NUCLEINIC ACID, WITH SPECIAL REFERENCE TO ITS EMPLOYMENT IN TUBERCULOSIS.

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(Continued from page 302.)

Review of Cases Reported in 1894.—Two years ago I reported twenty-four cases treated with yeast nucleinic acid.[1] At the time of that report twelve of these patients were living. It will certainly be of interest to give the further history of these cases, and this I will now proceed to do as briefly as is consistent with accuracy.

CASE II.[2]—I began treating this young man May 1, 1893. At that time "moist râles were heard over both lungs, both anteriorly and posteriorly. No cavities could be detected. The sputum contained numerous tubercles, which on being crushed and stained were found to be filled with bacilli. The daily maximum temperature for three days before beginning the treatment averaged 100.3° F. Night sweats were constant."

The treatment was continued through May and June of 1893. "The temperature did not reach 100° F. after June 2d; it seldom went higher than 99° F., and during the last four days of treatment it was normal continuously. Night sweats were occasional and slight during June. The cough and expectoration decreased, and some mornings during the latter part of June, he failed to raise anything when asked to bring the sputum for examination; but when the sputum was raised and examined the bacillus was always found."

In July, 1893, this young man went, by my advice, in a wagon from Kansas City to Boulder, Col., where he has continued his residence. He has had no medicinal treatment since going to Colorado. He considers himself well, but his weight is practically the same as it was when he was under treatment in 1893, and the sputum, a little of which is coughed up nearly every morning, contains from two to six bacilli in each field. I have not seen the patient since June, 1894, when a physical examination showed practically the same condition of the lung as that existing one year before, and consisting wholly of diminished resonance over both upper lobes.

From this case, I have drawn the following conclusions, subject of course, to revision, as all such conclusions must be, by future observations: (1) Physical examination of the lungs in tuberculosis shortly after a hemorrhage (this patient had a hemorrhage the day before the first examination) may give a very erroneous impression of the extent of the involvement. The moist râles heard over the greater portion of both lungs in the first examination of this case were due to the pneumonic infiltration induced by the hemorrhage, and the area of tubercular involvement was not so great as I at first supposed. (2) The sputum may contain tubercle bacilli long after the patient supposes himself well. This is certainly true when the disease has been arrested by residence in a favorable climate. This explains the frequently observed fact that consumptives apparently cured by long residence in a suitable climate suddenly develop an active and rapidly progressive form of the disease on returning to a less favorable climate; or the equally well known fact that such persons may remain in apparent health so long as they live out of doors, but soon die of tuberculosis on changing their occupation to one more sedentary, especially when a large portion of the time is spent under unsanitary local conditions.

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[1] "Treatment of Tuberculosis with Yeast Nuclein," MEDICAL NEWS, 1894.

[2] Refers to number of case in first report.

Webber[1] gives the following interesting history of a tubercular family, which suggests the possibility of the tubercle bacillus remaining in an inactive state in the body for many years:

> "Thirty years ago I treated a woman in a small street in Bloomsbury Square for galloping consumption. Her husband, a teacher of languages, had died shortly before, at the age of thirty-eight, in the German hospital, of chronic tuberculosis. Both his and her family were tuberculous. They had seven children, one of which had already died of tuberculosis. Of the six remaining children all save the youngest, a rachitic boy, were apparently healthy. On the death of the mother, intelligent and well-to-do friends took the children to one of the most healthful parts of Germany and brought them up under the best hygienic conditions. The eldest son remained perfectly well so long as he lived out of doors, but at the age of twenty-three he became deeply interested in philological studies and worked day and night, confining himself to his study-room, in which he took most of his meals. Eighteen months later he died of quick consumption. The second son interested himself in agriculture until he reached the age of twenty-nine. Up to this time he apparently enjoyed perfect health. At the above-mentioned age he changed his occupation, and worked in an office, confining himself closely. Two years later he began to have hemorrhages and ultimately died of tuberculosis. The third son entered and continued in a cavalry regiment, and is the picture of health. The fourth child, a girl of five years of age at the time of the death of her mother, is now the healthy wife of a German farmer. The youngest son, the rachitic boy, is now a robust farmer in Manitoba, and the youngest daughter, also in perfect health, lives with her Canadian brother."

Of course it is possible that the first and second sons might have become infected for the first time after entering upon their sedentary occupations, but it is also possible that they might have carried the infection from their early childhood. The presence of living tubercle bacilli in calcified cavities in the lungs is mentioned in another part of this paper. The point which I wish to emphasize here is that one in apparent health may carry the tubercle bacillus in his lungs for many years.

Under date of November 1, 1896, this patient (Case II) writes me as follows: "I have examined my sputum and find b. tuberculosis in it in such small numbers that in a cover-glass preparation it takes a little hunting to find them. My general health is excellent. I spent the summer out of doors and climbed Long's Peak (14,270 feet) without difficulty."

CASE IV.—This was an aggravated case of urinary tuberculosis. Hypodermic injections of iodin and gold, and boric acid, salol, quinin and iodoform by the mouth, had been tried. One gallon of cod-liver oil was taken within seven weeks. The nuclein solution was administered hypodermically and also injected into the bladder. This treatment was begun in June, 1893, and continued for nearly one year. In November, 1894, the patient, a practitioner in Nebraska, reported no incontinence, scarcely any irritation of the bladder, and that he weighed more than he had for twelve years. No bacilli could be found in the urine. In March, 1896, he wrote me that he remained free from any evidence of a return of the disease, and that he had been engaged in a very laborious country practice. January, 1897, he reported himself as being perfectly well.

CASE V.—This was also a case of urinary tuberculosis of several years' duration. I closed my report on this case in 1894 with the following paragraph:

> "The greatest weight reached before the illness was 132 pounds. The decrease was gradual and constant to the time of beginning the treatment, when he weighed 114 pounds. Since that time there has been a steady increase, and the figure is now 138. The temperature at first often reached 102.5° F., sometimes 103° F. It has not been above the normal since early in October, 1894. The urine will be wholly free from sediment for several consecutive days, and then there will be a little pus in which the bacilli can be detected. There is still some undue frequency of micturition, and at times a sensation that the bladder has not been wholly emptied at the close of this act. The kidney has decreased in size, but is still abnormally large. There has been no pain from the passage of tuberculous masses through the ureter since the latter part of May, 1894. *Of course it is possible that the disease may extend again. I shall not call this a cure until the urine becomes permanently normal, and this may never happen.* But even should this not occur, the history of the case is unique."

The wisdom of the caution expressed in the sentences now italicized soon became evident. In the spring of 1895, this young man, notwithstanding the continued use of the nuclein, developed acute general miliary tuberculosis and, although he hastened to

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[1] "Lectures on the hygiene and climatic treatment of chronic pulmonary phthisis" (German translation), p. 31.

Colorado, died within a few months. This is the most marked case of the temporary abatement and subsequent rapid spread of the disease under the continued employment of the nuclein that has fallen under my observation. The remedy lost completely its apparent value, and was wholly without effect. This case illustrates the relation between local and acute miliary tuberculosis and the inadequacy of the nuclein treatment in the latter.

Case VI.—This, the third case of urinary tuberculosis reported in my article of 1894, has continued without any evidence of the existence of the disease. Dr. R. remains well, is engaged in a laborious practice, and one year ago published an interesting report of his own case.[1]

Case XVII.—This man continued this treatment until February, 1895. I last saw him in June, 1895. At that time there was still a marked prolongation of the expiratory sounds over both upper lobes, and the afternoon temperature generally registered 99° F. His weight remained at 140 pounds, and he raised some sputum each morning, which contained a few bacilli. Since June, 1895, I have not been able to ascertain his residence, and consequently have no knowledge of his present condition. The conclusion concerning this case, as stated in my report of 1894, was as follows: "I believe that in this case the disease has been retarded by the treatment—I will not say arrested, because so long as the infection remains there also remains the probability that it may at any time become progressive."

As this was a colored man, living from "hand to mouth," I shall expect should I hear from him again, that the disease has progressed.

Case XVIII.—This was a patient with a cavity in the upper lobe of the right lung and an extensive tuberculous pleurisy on the opposite side. Germs were abundant in the sputum and some were present in the effusion drawn with a needle from the left side. Treatment was begun February 19, 1894, and continued to November 23d of the same year. During this time the young man continued his work as bookkeeper and general office boy, cleaning the rooms, etc., in a bank. The weight practically remained unchanged during treatment but the average temperature slightly increased and "judging by this more than by the physical signs, I think that the disease is slowly progressing." A few days after discontinuing this treatment the young man went to Colorado, but the progress of the disease continued and he died in September, 1895.

Case XIX.—This is a saleswoman in a dry-goods store. The weight had fallen from 148 to 115 at the time of beginning the treatment, January, 1894. There was bronchial breathing over the right apex and subclavicular area and moist râles over the upper lobe of the left side. "*The sputum was non-purulent but contained tubercle bacilli.*" The treatment was begun January 4, 1894, and continued daily until the middle of July of the same year, when it was given twice a week until the first of October, 1894, and then once a week until June, 1895, since which time no nuclein has been given. The germs disappeared in March, 1894, and whenever on account of cold there has been any sputum, it has been examined, always with negative results. The patient continues her duties as a saleswoman and the conditions under which she lives are highly unfavorable. It is of interest to state that she is the third among the women clerks in the same store known to have developed consumption in the past six years. I have recently examined her lungs and fail to find any evidence of disease. Her weight varies from 125 to 135 pounds. This I have regarded as practically a case of unmixed infection. For two and one-half years the germs have not been found.

Case XX.—In the report of 1894 I stated that in this case the tubercle bacilli had not been found in the sputum since the last of March of that year, but that the tubercular cervical glands remained enlarged. This young lady continued under my charge until May, 1895. At that time her condition remained the same practically as stated in my last report. About this time her betrothed died very suddenly of appendicitis and since then the young lady has refused to take further treatment. Shortly after this I was called to see her on account of a pulmonary hemorrhage. I have examined the sputum and the blood and found the bacilli. She has been to my office a few times since and I have examined her lungs. The disease is slowly progressing. She still refuses further treatment.

Case XXI.—I last examined Mrs. M. in September, 1895. At that time there was no evidence of any disease in the lungs. She had no cough, and was, so far as I could ascertain, in good health. I have not seen her since that time, but she remains apparently well, and wholly free from cough.

Case XXII.—In this case the sputum was abundant, but non-purulent, and contained only a few bacilli. The bacilli disappeared in July, 1894, and none have been found since. Mrs. R. has borne one child since my last report. Her weight is now 128; at the time of beginning the treatment it was 106. Her work renders her susceptible to frequent attacks of acute nasal catarrh, but her lungs have remained free from involvement. This case illustrates what may be done even under adverse conditions, in the treatment of tuberculosis so long as it remains an unmixed infection.

Case XXIII.—Mrs. C. continues in good health, weighing 135 pounds. She has had no treatment and no cough since the summer of 1894. She is the wife of a poor farmer and the mother of ten children. This is another illustration of the good that may be accomplished by treating the disease in its earliest stages.

Case XXIV.—E. H. went to Colorado in November, 1894, and I am told that he continues well there. I have no more definite information concerning him.

Summary of the Cases Reported in 1894.—In my article of two years ago I reported twenty-four cases of tuberculosis treated with yeast nucleinic acid.

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[1] *Therapeutic Gazette*, October 15, 1895.

Many of these were in the last stages of the disease when the treatment was begun. For details I must refer readers to the article. At the time of the report twelve (fifty per cent.) had died. Of the twelve then living, two have since died of tuberculosis (Cases V. and XVIII.). Of the others, three (Cases II., XVII., and XX.) are certainly still infected with the disease. Of the seven others, I have recent knowledge of five (Cases IV., VI., XIX., XXII., XXIII.), and these now show no evidence of the disease. So far as I know, two others (XXI. and XXIV.), remain well. This gives 20.8 per cent. known to be free from the germs for the past two years, and 29.1 per cent. counting the two who were free from the germs when last examined. It will be seen that these percentages are figured on the twenty-four cases, many of which were in a hopeless condition when first seen.

Case XXV.—Miss E., a student, has been under my observation since first coming to the University, in October, 1892. Her history is briefly as follows: Her father died at the age of sixty-seven, after suffering for some months from cystitis. (There is a possibility that the affection of the bladder may have been tubercular.) Her mother is living and well. Mother had one sister and one brother die of consumption. She has four brothers, all of whom are well with the exception of one who has some irregularity of the action of the heart, supposed to be due to the excessive use of tobacco. She has one sister, who is well. She knows of no special exposure to tubercular infection. During the first two winters of her residence in this place she suffered from frequent attacks of subacute bronchitis, coughed much and raised abundantly. In the spring of 1894 this cough was very persistent, and I several times examined the sputum, but with negative results. In June, 1894, she went to her home in Iowa, and apparently improved much. For some reason she delayed her return to the University in the fall, and was still in Iowa when she was attacked as herewith described: About 4 A.M., October 16, 1894, she awoke in an extremely nervous condition, and soon began to suffer from a severe cutting pain in the region of the left kidney. This pain soon became paroxysmal and excruciating. A physician was summoned and administered one-fourth of a grain of morphin hypodermically. This was followed during the day with repeated doses of chloranodyn, the pain continuing, but partly subdued by the medicines. Vomiting, possibly due to the anodynes, occurred in the afternoon. During the night she had a high fever, and her side remained sufficiently sore to keep her in bed for six days, and indoors four days longer. When she began to walk, she noticed that for some days every unexpected jar caused pain over the left kidney. Four weeks later she had a second similar, but less severe attack. After this she started on her return to Ann Arbor, but was compelled to stop for four days on the way on account of the pain in her side. This pain now returned daily, and was sufficiently intense to lead to the use of morphin. On November 27, 1894, this lady came to me and, after hearing the history of the attacks, as stated above, I did not doubt the correctness of the diagnosis of the Iowa physician, who had pronounced it renal calculi. I examined the urine, and was much surprised to find in it numerous tubercles, some quite as large as peas, rolled up, as it were, in epithelial cells. These contained bacilli in great numbers, and guinea-pigs inoculated with them developed tuberculosis. The urine contained no pus, blood, or albumin. Evidently the paroxysmal pains had been caused by the passage of these tubercular masses down the ureter. Nuclein injections were begun immediately, and continued daily for six months, then two or three times per week for another six months. Since October, 1895, no treatment has been given. The injections were made deep into the muscles directly over the affected kidney. The renal pain became gradually less pronounced, and the urine has been found to be constantly normal since June, 1895. The patient passed through the winter of 1895 and 1896 without any of the "bad colds" which had been so frequent and persistent during the winter of 1893 and 1894.

Case XXVI.—Mrs. W., of Marshall, Mich., came to me in October, 1894. She had several small cavities in the upper lobe of the right lung and there was only bronchial breathing over the corresponding lobe of the left lung. The larynx was involved and deglutition painful. Her weight was 116. An unfavorable prognosis was given and treatment was begun under protest. This patient has been most faithful and persistent in her endeavors to carry out the advice of her physician in every respect. With the exception of cocain in spray and lozenges for the throat, nothing but the nuclein has been employed. For one year the injection was given every day. At the expiration of that time, I insisted that the treatment should be discontinued for a time, but the patient felt that she was losing ground without it, and since then she has had injections nearly every day. She has kept a record of every treatment and has missed it only twenty days in two years. The weight has increased and during the past year has varied from 126 to 132 pounds. The condition of the larynx is much improved; deglutition is painless, and the urine normal. The cavities remain practically unchanged. I examined this lady November 12, 1896. The left lung reveals no abnormality. The breathing over the right apex and subclavicular area is bronchovesicular. I do not think that I am attributing too much to the action of the nuclein when I say that it has retarded the progress of the disease. Indeed, her condition is much better than it was two years ago. The temperature for the first year of treatment seldom had a maximum for the day less than 101° F. The maximum from September 17 to September 28, 1896, was 99°; from September 28th to October 2d, 98.3°; from October 2d to October 9th, 98.4°. It has been taken four times a day every day for the two years.

Dr. Foote of Marshall has been associated with me in the treatment of this and the following case. The patient now raises but little, but bacilli are present.

CASE XXVII.—Mrs. T., of Marshall, Mich., was first seen in December, 1894. Two brothers and one sister died of consumption. Patient has always had enlarged cervical glands. She lived in the same house with her consumptive sister during the illness of the latter. Patient has coughed for fifteen years, but this cough has been more constant for past six months. At the time of examination she was raising freely. Bronchial breathing and moist râles were heard over both upper lobes, showing that the area of involvement was large; but there were no cavities and the bacilli were found only after most minute search and frequently samples of sputum in which no bacilli could be detected were examined. This patient continued the use of the nuclein to June, 1895, when she had gained some ten pounds in weight and coughed much less. In the fall of 1895 the cough returned and she went to Florida. Dr. Foote writes me that this patient continued to improve so long as medicine was administered, but that she returned from the South with the disease much advanced and that he now regards her condition as hopeless.

CASE XXVIII.—Mrs. K., of Holland, Mich., aged forty-four, was first seen December 5, 1894. Father died at sixty-five with some obscure trouble not named by the physician in attendance. Mother died at fifty-six of consumption. Brothers and sisters have been free from tuberculosis. One of her mother's sisters and one of her father's brothers died of consumption. Patient has been coughing and raising for past three years. Some three weeks ago she went to Dr. King of Grand Rapids, who examined sputum and found tubercle bacilli. There is bronchial breathing over both upper lobes. The apices are retracted and there are probably small cavities in left lung. The afternoon temperature for three successive days before beginning the treatment averaged 101.5° F. This patient remained with me only three weeks. Since then she has been under the care of Dr. Kremers of Holland and Dr. King of Grand Rapids.

Dr. King sends me the following notes of this case:

1895. January 24. Returned from Ann Arbor, where patient had been under the care of Dr. Vaughan, who had employed nuclein solution hypodermically. The examination of the chest was made with much the same result as upon first examination, with exception that *moist* gurgling râles could now be heard at the left apex and bronchial breathing at the internal borders of both scapulæ. Cough and expectoration very slight. Appetite and digestion poor. At twelve o'clock noon, pulse 100; temperature, 99° F.

Patient placed upon "phospho-albumen," ʒ ii t.i.d., and benzoate of guaiacol, gr. iii t.i.d. Evacuant mixture when necessary for bowels; 70 minims one per cent. nuclein solution hypodermically, daily.

October 21st. Patient has been steadily improving. The treatment has been continued, and in addition, inhalations of creosote, eucalyptus and menthol are employed daily. At five o'clock P. M., temperature normal; pulse 100.

October 26th. Nuclein solution increased to 100 minims daily.

November 5th. Intercurrent "cold." Patient not so well.

November 10th. Improvement. Patient returned to Holland and the injections continued daily by husband.

1896. March 7th. Patient has been steadily improving in general condition. The areas of dulness have not increased and the râles, dry and moist, are entirely absent. For the past two weeks the nuclein solution one per cent. has been increased to 200 minims daily with good effect.

May 6th. Examination discovers no material change since March. About one week ago slight bloody expectoration; none since, however.

June 28th. The five per cent. solution of nuclein substituted for the one per cent., in daily hypodermic injections of 30 to 50 minims.

July 31st. Patient caught cold from exposure; increase of cough and expectoration.

August 5th. The five per cent. solution has been used continuously since June 28th, with success, although patient has not been quite so well as before the middle of July.

October 9th. The five per cent. solution has been continued, at times increasing the dose to 100 minims, with steady improvement. The areas of dulness are unchanged. There has been no extension of consolidation, and the patient enjoys comparatively good health.

The result up to date is eminently satisfactory to both the patient and myself.

(To be continued.)

CLINICAL MEMORANDUM.

EXCISION OF THE COCCYX FOR FRACTURE AND NECROSIS, WITH A REPORT OF FOUR CASES.[1]

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IN fracture of the coccyx we have as etiological factors a blow or a fall, the tip of the bone usually receiving the impress direct. Parturition, more particularly when attended by a narrowed pelvic outlet, may also be ascribed as an occasional factor. The pain, acute at the time, frequently diminishes to such an extent that the patient often gives but little heed to the injury; but months, or perhaps years, later she consults a specialist, and it is found that often there is necrosis of the bone, with accompanying suppuration, the fistulous opening being usually over the sacrum, rarely into the rectum.

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[1] Read by title at the ninety-first annual meeting of the New York State Medical Society, Albany, January 28, 1897.

Our attention is called to the condition of coccygodynia, a term applied without reference to the exact lesion present (there often being a concomitant pelvic lesion) by the patient complaining of pain in the region of the coccyx, which is decidedly increased when assuming a sitting position, or when sudden pressure is made upon the coccyx from any direction. Contraction of the attached muscles also gives rise to excruciating pain. The coccyx can readily be palpated and a diagnosis of fracture or of abnormal sensitiveness be made by means of the index finger in the rectum and the thumb over the region of the coccyx externally.

Measures for the relief of this condition should be of a radical character, temporizing being of no avail. Subcutaneous tenotomy has been suggested for this purpose, and has occasionally been resorted to, but it is an unsatisfactory procedure, and has deservedly been abandoned, since in nearly every instance a fracture, not infrequently attended by necrosis, is present. Excision of the fractured or necrosed portion of the bone is unquestionably the only measure to adopt, as by this means an excellent result and permanent cure is obtained. This operation, though not a difficult one, is by no means a simple procedure, as care must be taken not to injure the rectum, the septum being often thin and delicate. An incision, one and one-half or two inches in length, is made along the line of the coccyx and, if need be, extended over the lower portion of the sacrum. In severing the muscular attachments and dissecting out the portion of bone to be removed, I prefer blunt-pointed scissors and the handle of a scalpel. The fractured portion of bone can then be readily dislocated, either by the scissors or a small rongeur forceps. The stump of bone should then be rendered smooth and free from spicules; if necrosis be present, the bone should be thoroughly scraped. If the fracture is an uncomplicated one, and the operation thoroughly aseptic, the incision may be closed by suture; but in the case of necrosis, suppuration being present, only the upper portion of the wound should be closed, the remainder being packed with iodoform gauze. The dressing should be renewed every two or three days until the wound has entirely healed.

CASE I.—J. K., aged twenty-three, married seven months. Had a miscarriage three months after marriage. About one and one-half years previous to the time I saw her she had met with an accident, the lower portion of the spine having come in violent contact with a window-sill. She experienced acute pain, and shortly afterward an abscess developed at the site of the injury. This broke spontaneously and then closed, but during the following three months twice recurred, and was opened. At the time of my visit the abscess was discharging, the patient could not sit squarely, and an attempt to rise was accompanied by intense pain. The bowels were regular, and defecation was not painful.

A diagnosis of fracture of the coccyx, with accompanying necrosis, was easily arrived at, a probe passed into the cavity detecting the presence of exposed and roughened bone. The fractured portion of the coccyx was removed, the remaining stump thoroughly scraped, the indurated and necrotic tissue in the neighborhood of the sinus excised, and the wound packed with iodoform gauze. Recovery was complete.

CASE II.—B. T., aged thirty-four, married sixteen years. Had had one child, the labor being normal. Twelve years before she had received a kick on the lower portion of the spine, but the constant pain from which she was suffering at the time I saw her had not developed until several years later, since which time it had gradually increased in severity, especially when she walked upstairs, bent over, or defecated. The diagnosis of fractured coccyx was made, the fragment excised, and the wound closed with catgut sutures. Primary union took place, and there was no return of the trouble.

CASE III.—M. K., aged twenty-four, single. During four years she had suffered from a constant, dull, heavy pain in the region of the coccyx, which extended to the left hip and down the left thigh. She had met with an injury some time before, a closing door striking her as she was bending forward, in the neighborhood of the sacrococcygeal articulation.

The operation disclosed a rare condition of affairs, the coccyx presenting a double fracture, one being at the junction of the two bones and the other near the tip. Recovery was complete.

CASE IV.—M. S., aged twenty-one, single. This patient gave a history of having sustained a fall upon the end of the spine about six years previously, a chair having been pulled away as she was about to seat herself in it. She felt a sharp, stinging pain at the time, but this soon disappeared. Four and one-half years subsequently an abscess developed at the seat of injury. This had been opened by a physician, but a suppurating sinus three inches in length, its opening being one inch to the left of the sacrum, had persisted.

The operation for relief of the condition disclosed the presence not only of a fractured coccyx and considerable necrosis, but of a broad sinus, having four ramifications, two of which led into the deeper tissues. A mass of indurated tissue the size of a closed fist was excised, along with the fractured portion of the bone, and the wound packed with iodoform gauze. Two months elapsed before the wound had entirely closed.

HOSPITAL REPORT.

THE TREATMENT OF TYPHOID FEVER AT THE PRESBYTERIAN HOSPITAL, NEW YORK.

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IN a systematic description of the treatment of typhoid fever, it seems but proper to mention what is known as the abortive treatment of the disease. At the Presbyterian Hospital this has met with but little favor. Patients with true typhoid fever who enter the hospital during the first week of the disease, form a small proportion of the cases admitted. On the other hand, a considerable number of patients, presenting the symptoms of an early stage of the disease, promptly recover after a few days of rest in bed and the administration of a mild cathartic. If these last are cases of typhoid fever, we do not *know* them to be such. The fact that they recover in so short a time, practically without treatment, must cast a grave doubt upon the efficacy of any form of so-called abortive treatment instituted before a certain diagnosis can be established. The introduction of the Widal method of diagnosis may help to clear up this point. Injections of antitoxin, prepared from cultures of the typhoid bacillus, have been used. They apparently caused the disappearance of all symptoms within one or two days, in a case of undoubted typhoid admitted during the second week of the disease. Several other cases were so treated with unsatisfactory results; therefore no conclusions could be drawn. As the Woodbridge treatment has not been carried out in the systematic manner recommended by its author, little evidence can be obtained for or against it in the records of cases in this hospital.

It will at once be seen, from the above remarks, that the plan of treatment practised is of the expectant and sustaining kind. The Brand method of tub-bathing, since its establishment here by Dr. W. Gilman Thompson in 1890, has gradually become the principal and most reliable means of carrying this out. As a majority of the cases are admitted during the second week of the disease, I will first briefly describe the management of such a case throughout. On admission, the patient's clothing is removed, he is immediately put to bed, given a tepid sponge-bath, and made as comfortable as possible. He is then seen by the house physician, who makes a physical examination, prescribes a milk diet, and, as the case may require, a mild cathartic, or some intestinal astringent. Unless there are other marked indications, this is all that is done at this time; it is a routine treatment followed in all cases. Should the patient give a typhoid history, however, and, on examination, an enlarged spleen and typical spots be found, tub-baths are ordered without further delay, and precautions taken against communication of the disease to others. Otherwise, he is watched until he has been seen by the attending physician. He is visited by some member of the house staff at least three times a day, and oftener if necessary. Once a day he is seen by the attending physician, and once in the twenty-four hours a careful examination is made of the condition of the mouth and tongue, abdomen, heart-sounds, pulse, and posterior chest. During the whole course of his illness, and for ten days after his first subnormal temperature, he is kept flat on his back in bed. His diet is entirely a fluid one. The bowels are regulated according to the necessities of the case, and the temperature controlled by means of baths, according to the rules given below. This treatment, in mild, uncomplicated cases, is frequently all that is required. A number of patients make good recoveries with this alone, and the constant care and attention of the nurses; but, on the contrary, the greater number require more radical measures. I shall take up, seriatim, the various symptoms presented, and describe the methods by which they are met.

NERVOUS SYSTEM.

Headache is a fairly constant and usually very distressing symptom of the early stages of the disease, and it is at the same time one of the most difficult to control, it being due in so many instances to the toxemia. When due to constipation or decomposition of intestinal contents, the following treatment is made use of: Calomel in one-tenth grain doses is administered every hour until ten doses have been taken, and this is followed by half an ounce of sulphate of magnesia, if necessary. At the same time, salol and phenacetin, each 5 grains, may be administered every four hours for a few doses. When the pain is caused or greatly aggravated by the increased force and frequency of the heart action, tincture of aconite, 1 minim every hour, for eight or ten doses, may be administered in place of the salol and phenacetin. The effect of either of these forms of treatment should be anticipated by the application of an ice-cap or cloths wrung out in ice water to the head, or of a small mustard plaster to the nape of the neck. Should the abnormal temperature be the cause of the headache, the latter will be relieved by the institution of the baths. Often enough all measures fail, and the headache finally passes off of itself. Rare forms of headache due to cerebral complications, coming on later in the disease, and that of convalescence due to the anemia, are dealt with by treating the cause.

Sleeplessness.—During the first ten days when the patient is kept awake by the headache or by pure nervousness, 15 grains of trional and $\frac{1}{4}$ of a grain of codein usually procures sleep. Such sleep is of genuine benefit and comfort to the patient, and there is no hesitation in so procuring it. When the sleeplessness is due to the pain of complications, morphin is administered, hypodermically, in sufficient doses to give relief.

Delirium.—Since the introduction of tub-bathing, delirium severe enough to require special treatment, is rare. Occasionally a patient becomes wildly delirious, rendering it necessary to have an attendant by him at all times. A previous alcoholic habit aggravates and predisposes to delirium in typhoid as in pneumonia. Leaving out the presence of excessive toxemia and cerebral complications, it is usually due to three causes acting separately or together, *viz.*, high temperature, asthenia, or over-stimulation. For the delirium of high temperature the baths usually suffice, while for that of asthenia it is necessary to push the stimulation until the circulation is improved. A very frequent cause of a wild and restless form of delirium is the administration of excessive quantities of whisky. This should always be remembered when even moderate doses are given, and the quantity should be reduced and the other stimulants be increased if necessary. It is imperative that the wildly delirious and maniacal patients should be constantly watched, for they are certain to get out of bed if left alone, and it then becomes a matter of chance whether they do themselves serious harm or not. Fortunately, only a very few resist all forms of treatment, and go from bad to worse, wearing themselves out by their constant movements. To these may be given $\frac{1}{100}$ of a grain of hyoscin and 3 to 5 minims of Magendie's solution. This cannot be repeated very often with safety, and it is only temporary treatment at best. One should hesitate to give it except as a choice between two evils.

TREATMENT OF TEMPERATURE.

Bathing is our most reliable means for reducing temperature. Not only do the baths reduce the temperature, but they powerfully stimulate the circulation and respiration. This will be evident to any one who studies the temperature chart of a typhoid patient who has been so bathed; while the sense of increased comfort and improved general condition of the patient is forced upon the attention of the unbiased observer at the bedside. Statistics of other hospitals the world over abundantly show the efficacy of this form of treatment when begun early in the course of the disease. The following facts, which bring this out very clearly, are offered as a contribution to what has already been written on the subject. They have been obtained from an analysis of 200 cases admitted from January 17, 1893, to December 31, 1895, and are not selected in any sense of the word. The full tables will be published in the Presbyterian Hospital Report for this year:

TABLE NO. 1—ANALYSIS BY WEEKS.

	First Week, Per cent.	Second Week, Per cent.	Third Week, Per cent.	Fourth Week, Per cent.
Mortality	7.8	7.4	18.	42.9
Complications and relapses	23.6	45.5	45.9	50.
Average duration, weeks	5.1	5.8	7	7.4

Patients admitted during the first two weeks of the disease, exclusive of five patients moribund on admission, show a mortality of between 7 and 8 per cent., and an average duration of about five weeks. It may be said of these patients that they had the full benefit of hospital care, as well as the advantage of the baths. On the other hand, those admitted during the third and fourth weeks of the disease show a mortality of 18 and 42 per cent., respectively, and an average duration of about seven weeks.

A further analysis of patients admitted during the first and second weeks gives the following table:

TABLE NO. 2—PATIENTS ADMITTED DURING THE FIRST TWO WEEKS OF THE DISEASE.

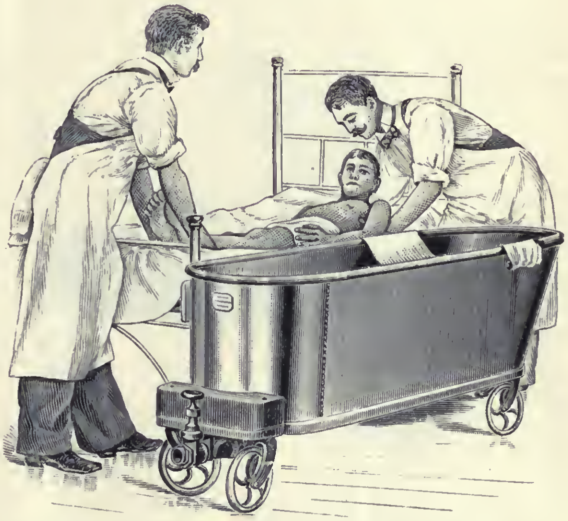
	Tub Bathed.	Sponge Bathed.	Tub and Sponge Bathed.	No Baths.
Number of patients	47	25	58	14
Percentage of mortality	4.1	11.5	13.7	..
Average time in hospital (weeks)	5.7	6.1	6.8	4.5
Average duration (weeks)[1]	5.6	5.5	5.8	4.2
Percentage of complications and relapses	37.5	34.6	55.1	17.6

This table is striking, in that it shows a high mortality among the patients treated by sponge baths alone. These cases would seem to have been of about the same grade of severity as those tubbed, if the average percentage of complications and duration is any index. Taking the same data as an index of severity, those treated by both tub and sponge baths were of a severe and prolonged type. Again, those patients who received no baths were suffering from a mild attack, and their temperature did not reach the bathing point often enough to make baths necessary.

So much for the results of tub bathing as carried out in this hospital. The mode of procedure is as follows:

A long narrow tub filled with water at a temperature of 75° F. is rolled close to the side of the bed. The screens are drawn about both bed and tub. The patient's ears are now plugged with cotton, and a binder placed about the loins. Two attendants firmly grasp the shoulders and feet and lift him from the bed into the tub. While in the bath his head rests upon a rubber cushion, the rest of his body being entirely submerged. His whole body, except the abdomen, is now vigorously but gently rubbed, special attention being given to the back. At the same time his head and face are kept constantly soaked with ice water. At the end of fifteen minutes of this treatment he is removed from the tub. The bed has been freshly made in the meantime and covered with two rubber blankets, and these, in turn, by an ordinary sheet. With this sheet his body is immediately dried. The rubber blankets are now removed and the patient finds himself in a dry, clean bed. He is now covered with a sheet and blanket, given a drink of hot milk or hot whisky and water, and a hot water bottle is placed at his feet. After an hour the blanket is removed, leaving only the sheet as a covering, and his temperature, pulse, and respiration are taken and recorded. Unless suffering from an actual chill, patients with fever are covered only with a sheet, and when receiving baths, as a rule, no night clothes are worn. They soon get used to this, although at first they seem to miss the comforts of home in the shape of two or three suits of flannel underclothing, all worn at once to "prevent taking cold."

Fig. 1.



Method of administering a tub-bath to a typhoid fever patient.

This is the routine followed in each case of tub-bathing. The temperature of the patient is taken, per rectum, every four hours, as well as one hour after each bath. When the temperature at the fourth hourly observation reaches 102.5° F. he is given a bath as above described. The question of how the baths are borne is an important one and varies with the standpoint from which it is viewed. In a large number of instances the patients regard it as a distinct hardship and often bitterly complain of it. On the other hand, the cases are not rare in which the baths are enjoyed and are looked forward to with pleasure. The ultimate result is the same in both these cases provided the patient belonging to the former class does not put his objections into the form of actual resistance. Too much stress cannot be laid upon proper and efficient rubbing, especially of the back. This region, hard to get at, is frequently neglected until the patient insists upon the attention. Rubbing not only adds greatly to the patient's comfort, but is the secret of success in tub-bathing. From the standpoint of the physician the majority of the patients bear the baths extremely well. It is the exception when one has to be removed from the tub before the time has expired. Shivering is a constant accompaniment of the bath and must be disregarded. The pulse becomes small and wiry soon after the patient is placed in the water, thus demonstrating the stimulation to the circulation. Toward the *end* one expects to see slight cyanosis, which is of little importance. Syncope or marked cyanosis are indications for immediate removal from the bath. The patients excepted from this treatment are few. Patients suffering from collapse, hemorrhage, perforation, peritonitis, pleurisy, or pericarditis, or those who are weak and debilitated from other causes, usually women and old people, and occasionally one who strenuously objects, are not given tub-baths.

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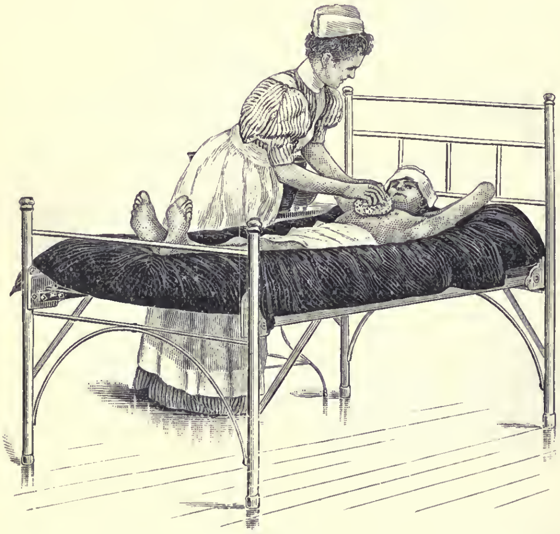
[1] Duration computed to tenth day after first subnormal temperature is therefore much longer than is ordinarily stated.

FIG 2.



Method of administering a sponge-bath to typhoid fever patient.

The sponge bath is given for high temperature when from any reason the tub baths are not practicable or advisable. It is given as follows: Two stout rubber sheets are placed under the patient and two rolled blankets under these, one on each side, forming a kind of trough. His ears are plugged with cotton, and a binder placed about the loins, as in the tub bath. He is now sponged from head to foot with water varying in temperature from 90° to 60° F. From time to time the water is squeezed from the sponge at a distance of one or two feet above the chest. This is kept up for fifteen minutes, as in the tub bath, and the after-treatment is the same. The advantages of the sponge-bath are, the facility with which it is given, no tub being necessary, and the fact that the patient is not moved from the bed. The disadvantages are, the lack of stimulation to the pulse and respiration, and the fact that friction to the surface cannot be so effectually employed. The fall of temperature after a sponge-bath may be great, but in the majority of cases this is not so reliable as after the tub. A comparative study of the temperature charts of tubbed and sponged cases brings out the fact that pulse, temperature, and respiration remain stationary or go up more frequently after a sponge-bath than after a tub. Another point worthy of mention holds good of both tubs and sponges. Patients who complain bitterly of the length of the bath often seem to do better if the temperature of the water is lowered even to 60 or 65° F., and the time shortened to ten minutes. The wet pack or the ice pack are seldom resorted to here in the treatment of typhoid fever.

CIRCULATORY SYMPTOMS.

When the pulse is of good quality, not over one hundred to the minute, and the first sound of the heart is clear and distinct, stimulants are not given. In the majority of the cases, however, some time during the second week, or earlier, signs of heart weakness make their appearance. This is noted, first in the increase in the frequency of the pulse, second, in inequalities in the heart and pulse rate, and third, in weakening of the first sound of the heart. Whisky in half-ounce doses every four hours is the first stimulant used, and is given at the first signs of heart-failure. Should this not be sufficient, strychnin, one-thirtieth of a grain every four hours, or fluid extract of digatalis, three minims every four hours, are administered, either separately or together. At times all these are given together with good results. They are not without disadvantages, especially when given in excessive doses. Increase in the delirium, rapid heart, or vomiting, are not infrequent results of too large or too frequent doses of whisky. The amount and frequency should be reduced, under these circumstances, or it should be suspended altogether. When the stomach alone is affected, champagne with cracked ice is the best substitute.

Diarrhea or intestinal hemorrhage are indications for withdrawal of the strychnin. The former may be directly due to the drug, while the latter is aggravated by it, except in cases of intestinal hemorrhage due to passive congestion of the viscera. When strychnin is given in large doses, the reflexes should be examined each day and the quantity of urine excreted carefully watched. If this is not done and warnings heeded, a sudden reduction in the amount of urine excreted may be promptly followed by more or less alarming convulsions. Digatalis often disagrees with the stomach and may have to be withdrawn temporarily, or even permanently.

RESPIRATORY SYSTEM.

The bronchitis which accompanies typhoid fever receives no special attention. It usually clears up as soon as the tub baths are begun. Bronchopneumonia is not very common. It is prevented in a large measure by the effect of the tub baths, by careful cleansing of the mouth, and care during feeding.

When bronchopneumonia is established counter-irritation is resorted to and tub baths are persisted in. The baths seem to be of the greatest importance here. Passive congestion is guarded against by constantly changing the position of the patient. When the congestion is marked in degree it is an indication for increasing the stimulation. The occurrence of lobar pneumonia renders the suspension of the tub baths and the substitution of sponging necessary. It is treated on general principles.

DIGESTIVE SYSTEM.

Care of the Mouth.—Special attention is given to the cleansing of the mouth. A foul mouth with sordes on the teeth is not only a menace to the patient, but is looked upon as a disgrace by the nurse in charge. It is only seen in recently admitted cases. For cleansing purposes two solutions are used, *viz.*, lemon juice with a little glycerin, or a mixture of peroxid of hydrogen, one part, with lime water, three parts. Swabs are made by wrapping bits of soft cotton around the end of an ordinary wooden toothpick. With these swabs and one of the above mentioned solutions the teeth and gums are carefully cleansed, and the tongue gently scraped after each feeding, and oftener if necessary. Should the patient be annoyed by unpleasant tastes in the mouth, due to decomposition of food in crevices that cannot be reached, rinsing the mouth with the peroxid and lime water at occasional intervals will give great relief.

Eating Utensils.—Dishes, glasses, cups, spoons, and trays, are all kept separate from those in general use in the ward. After having been used they are scalded and then cleansed.

Diet.—Careful attention to the diet is of the greatest importance in the treatment of typhoid fever. Milk and alcohol in some form are the most reliable and satisfactory forms of food. Other articles of food than milk are used in certain cases, and at certain periods of the disease, as we shall see later. Alcohol, as a rule, is not used until it is also needed as a stimulant. From the day of admission until ten days after the first subnormal temperature, the diet is invariably a fluid one. The amount given is from 60 to 72 ounces during twenty-four hours (five or six ounces every two hours), the patient being awakened if necessary.

The disgust that some of the patients develop for milk is not to be wondered at, given as it is every two hours with the regularity of clock-work. Much can be done to relieve the monotony of such a diet and to prevent the lasting distaste which may develop for a most wholesome article of food. The following dietary was originated to meet just such a contingency, and for sake of brevity has been somewhat facetiously called "typhoid delicacies." It can be made use of at the height of the disease. One or the other of the articles mentioned are given in five or six ounce doses every two hours, and the ménu is varied according to the taste of the patient or the wishes of the physician: (1) Milk, plain or peptonized, with vichy or lime water; (2) junket (made with essence of pepsin); (3) beef tea; (4) mutton broth (strained, and free from fat); (5) arrowroot (made with milk or water, and flavored with vanilla or sherry); (6) egg albumen (made from white of egg shaken up with cold water, and flavored with lemon juice or vanilla). Ice-cream is also allowed in moderation, more as a delicacy than as a food. Three days after the first subnormal temperature he may be given a little milk toast. The following day, improvement continuing, he may have an egg poached in milk, or soft boiled, and a little tea. The next day his dietary may be still further varied by the soft part of half a dozen raw oysters, flavored with pepper or salt to the taste. On the tenth day he is given a chop or scraped beef sandwich. During the remainder of convalescence he is fed up as much as possible on a nitrogenous diet. When he leaves the hospital he is cautioned against indiscriminate eating of indigestible vegetables and fruits for a year.

Vomiting is prevented, mainly, by adherence to the strict rules of diet. One cannot help remarking the frequency with which patients are admitted with a history of persistent vomiting, which promptly subsides without any other treatment. The articles of food brought to many patients by their friends and confiscated by the nurses furnish ample proof of this. When vomiting does occur a cause is always sought for, and frequently found. When not due to complications such as peritonitis, perforation, etc., it is often caused by errors in diet or medication. The quantity of food is at once reduced, and lime water may be added to the milk, or it may be peptonized. Finally, the milk may be temporarily suspended altogether, and some other article of food, such as beef tea, substituted for it. Over-medication is frequently a cause of vomiting. A temporary complete suspension of all medicines by the mouth will often be all that is necessary to stop it. In these cases stimulants are given by hypodermic injection, or per rectum. For the vomiting of peritonitis and perforation morphin is given in large doses.

Irritability of the stomach, with or without assignable cause, may be allayed by cracked ice alone or with small doses of champagne. In the same way, 2½ grains each of oxalate of cerium and bicarbonate of soda, given every two hours, sprinkled on cracked ice or added to the milk, often gives prompt relief.

Diarrhea.—When the number of stools does not exceed two or three small liquid ones a day, they may be disregarded. When more frequent than this, some cause is looked for. When the stools contain undigested milk, the quantity is reduced or it is peptonized. Strychnin aggravates, or in large doses often causes, diarrhea. Suspension or reduction of the dose is of course indicated here.

Powders of subnitrate of bismuth, 30 grains, and powdered opium, 1 grain, every four hours, will usually control the most obstinate cases.

Constipation is a more troublesome feature. A routine measure is to order a soap-suds enema every other day if the bowels have not moved in the meantime. This, as a rule, is satisfactory. After the establishment of convalescence the patient is given every morning, if necessary, 5 or 6 ounces of Hunyadi water.

Tympanitis.—Efforts to prevent the excessive formation and retention of gases in the intestines have been made with varying success. Probably the most satisfactory results have been obtained from the use of salol in 5-grain doses every four hours as a routine measure. No ill effects have been noticed at any time. On the other hand, the occurrence of severe and intractable tympanitis seems to be rare when salol can be given early and its use persisted in. With marked distension of the intestines there may be serious interference with respiration and heart action, as well as much greater liability to hemorrhage or perforation. Here salol in one or two doses is worse than useless; its administration is simply a waste of time. The most prompt results follow the use of turpentine stupes prepared in the following way: The abdomen is first covered with a coating of olive oil. To a quart of water a teaspoonful of oil of turpentine is added, and the whole kept near the boiling point at the patient's bedside. Pieces of flannel, large enough to cover the entire abdomen, are soaked in this, wrung as dry as possible, and laid on as hot as can be comfortably borne. The flannel is at once covered by oiled muslin and both left in place for fifteen minutes, when the stupe should be renewed. It may be necessary to continue this for days, as the effects, though prompt, may be very evanescent. Great care should be taken not to excoriate or blister the skin. With the occurrence of marked redness the stupes should be discontinued for an hour or so, and then resumed if necessary. Should these measures fail, a soft rectal tube may be passed ten or fifteen inches into the bowel.

Intestinal hemorrhage unfortunately is not a rare complication. Every effort is made to guard against it by restricting the diet to fluids, relieving and preventing tympanitis, and treating congestion of the lungs and a failing heart promptly. Patients with chronic heart lesions or cirrhotic livers are liable to the severest and most fatal hemorrhages in spite of the greatest care. The treatment varies with the severity of the hemorrhage and the cause. In all cases the tub-baths are suspended until there has been a movement from the bowels free from blood. The milk should be reduced in quantity, and if undigested particles of food are being passed per rectum, it should be suspended altogether or altered by the addition of lime-water or by peptonization. Beef tea may be substituted, and water given in almost unlimited quantities by the mouth. The routine treatment, in addition to the above, is to give the patient at once a hypodermic injection of 5 minims of Magendie's solution of morphin. This is repeated every four hours, in 3 minim doses, if the respirations are above fifteen to the minute, the effort being to maintain absolute quiet by means of as much opium as the patient can stand. Should there be a tendency to congestion of the lungs, $\frac{1}{100}$ of a grain of sulphate of atropin must be added to the morphin. The respirations cease then to be an index as to the amount of morphin necessary, and the physician must depend upon his own judgment. The application of cold to the abdomen in these cases has been abandoned as useless. The effort should be to prevent the occurrence of reflex peristalsis by sudden chilling of the abdomen, and this is attempted by having the patient wear a pad night and day. Should the temperature rise to 103° F. or more, and continue there for any length of time, the patient is given sponge-baths at a temperature of from 85° to 95° F. Subnitrate of bismuth in 30-grain doses is given for any diarrhea present, but the greatest reliance is placed on the opium to check the hemorrhage.

In the milder and even moderately severe hemorrhages this is all that is necessary. In those cases of grave severity, and even in the milder ones before their extent is known, the foot of the bed is elevated, pillows are removed, hot water bottles are placed in the bed, and the patient is covered with blankets. Stimulants are cautiously used, and intravenous injections may be given. As a rule, however, the more quiet the patient is kept and the less he is disturbed by efforts to relieve him, the better the chance of recovery.[1]

The Stools.—Under the head of "typhoid precautions" is included the care of the stools. Separate labeled bedpans are used for patients suffering from typhoid fever. After each dejection a pan is thoroughly cleansed and a few ounces of a 1 to 1000 solution of bichlorid of mercury is allowed to remain in it. The dejections are received into this solution, and as soon as the pan is taken to the lavatory the feces are covered with a 1 to 20 solution of carbolic acid and allowed to stand, well covered, for an hour or two before being disposed of.

The bedding and clothing of the patient, when removed from time to time, are at once sprinkled with a 1 to 20 solution of carbolic acid. They are then placed in a tub containing carbolic acid solution of the same strength, and remain their over night. They are then sent to the laundry. During five years not a single case of typhoid fever has developed among the employes in the laundry. On the other hand, hardly a year passes that a physician, nurse, or orderly, does not contract the disease. Everyone is cautioned about washing and disinfecting the hands after coming in contact with typhoid fever patients, but that some are careless is shown by the above statement.

URINARY SYMPTOMS.

With the large ingestion of fluids, severe kidney complications are rare. Most of the patients have a slight albuminuria at some time during the progress of the disease. A number also have a few hyalin or epithelial casts. As long as the daily amount of urine does not fall below twenty-five or thirty ounces, the albumin does not exceed one per cent., and the casts are largely hyalin, nothing more is done than to see that the patient receives a large quantity of fluids. More severe complications are treated on general principles. The baths are not discontinued for the milder forms of renal disturbance, but acute congestion renders their temporary suspension necessary.

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[1] Perforation and peritonitis become at once a surgical complication, and the advice of a surgeon should be promptly obtained. Medically, morphin in large doses, and absolute quiet, as in hemorrhage, give the only hope of recovery.

SKIN SURFACE.

Furunculosis and Bed Sores.—Undoubtedly furunculosis is more frequent among patients who systematically receive tub baths. This is due in a large measure to the constant friction necessary during the baths. With care and gentleness their occurrence can be reduced to a minimum but not altogether prevented, patients with a delicate skin being especially subject to them. The boils are troublesome and painful but seldom if ever reach serious proportions. They are first treated with compresses soaked in a one to eighty solution of carbolic acid, the dressing being held in place by means of rubber adhesive plaster. When suppuration occurs, the boils are incised, curetted if necessary, irrigated with a 1–1000 solution of bichlorid of mercury and packed with iodoform gauze, the dressing being held in place by adhesive strips. The baths are continued, the dressing being removed after each one. Cellulitis is a more serious complication and must be dealt with according to surgical principles.

Bed sores are very rare even in the most protracted cases. They are almost entirely preventable, and the average nurse looks upon their occurrence in a patient under her care as a disgrace. They are prevented, first, by the manner of making the bed and keeping the clothing smooth, and by frequently changing the patient's position; secondly, by removing all bedding and clothing that is the least moist or soiled; thirdly, by frequently bathing the areas most subject to pressure with a solution of fifteen grains of alum in one ounce of alcohol, drying the skin thus bathed, and dusting talcum powder on the surface. On the appearance of the slightest redness the patient is frequently moved from side to side and propped in this position by means of pillows. When a bed sore does develop it is kept clean and efforts to relieve pressure are redoubled. It may become necessary to resort to the use of the water bed.

Phlebitis and periphlebitis are very frequent complications and may occur during the disease, after convalescence is established, or later. By preference they most often occur in the internal saphenous vein. Of the rarer forms it is not within the scope of this article to treat. The affected limb should be kept as quiet as possible. If the patient is already up and about he should be sent back to bed. For the first few days the limb should be elevated on pillows and enclosed in cotton from the toes upward. If there is much pain, relief may be obtained by the use of compresses wrung out in a hot solution of lead and opium and applied in place of the cotton until the pain has subsided. As soon as the acute symptoms have passed off, the swelling and edema are reduced by means of a canton flannel bandage snugly applied. With this in place the patient may move about after a week or ten days, should it be proper otherwise for him to do so. When he leaves the hospital he is advised to wear an elastic stocking and to favor the leg as much as possible.

Peripheral neuritis is not common and is treated on general principles. The rarer complications will only be mentioned. Perichondritis is treated by cold; later, surgically, if necessary. Abscess of the thyroid gland becomes a surgical affection and is treated accordingly, also ischiorectal abscess, which should be opened promptly, the patient being anesthetized even at the height of the disease in order that it may be thoroughly done.

Lately, attention has been directed to what has been called, for want of a better name, "tender toes." This painful affection develops toward the end of the disease in a moderate number of cases. It is characterized by tenderness and hyperesthesia of the toes, which, to judge from the facial expression of the patients even before they are touched, must be very severe. The pathology is in doubt, and the hyperesthesia is the only sign of neuritis. The bed clothes must be raised from the feet by means of a cradle and the pain relieved by applying a mixture of menthol and spirits of camphor (grs. xv—℥ i).

MANAGEMENT OF CONVALESCENCE.

On the third or fourth day after the first subnormal temperature, the patient sits up in bed for a short time. The improvement continuing, he sits up a little longer each succeeding day. On the tenth day he is lifted in a blanket to a chair, and may sit there for an hour. The pulse-rate is taken before he leaves the bed, five or ten minutes after sitting in the chair, and just before he goes back to bed. This gives a good idea of the way in which his heart responds to the extra work thrown upon it. At the same time it is a valuable guide to the length of time he can remain up the next day. In two or three days he is given his clothes, and can walk about as he feels able.

It seems well to here speak of those patients, undoubtedly convalescents, who have an afternoon temperature of from 100° to 101° F. without assignable cause. A more liberal diet and light exercise, in these cases, will bring the temperature to normal. It would seem as though this rise of temperature was due to a mild form of starvation or anemia. These patients often cause no end of anxiety. No fixed rules can be given for their identification, the physician being compelled to depend upon his own judgment. It is undoubtedly best to be on the safe side and move with caution, for fear of relapse. Recrudescence and relapse simply require a resumption of treatment, as given above.

In conclusion, I wish to express my thanks to the members of the medical board of the Presbyterian Hospital for the courtesy shown me in the preparation of this paper.

MEDICAL PROGRESS.

Rare Pancreatic Tumors.—Sendler had the good fortune to operate successfully upon a tumor of the pancreas. The patient was a woman, aged fifty-four years, in whom, after nine months of slight digestive disturbance and emaciation, a rough, movable tumor could be made out in the navel, in the middle line. Examination of the contents of the stomach was negative. There was no pyloric obstruction and no intestinal symptoms. On account of the age of the patient and the loss of flesh and strength, a diagnosis of a malignant growth was made, either of the posterior wall of the stomach, or of the pancreas. At operation the liver, gall-bladder, and intestine were found to be healthy. The stomach was situated low down, so that the hard, rough tumor of the pancreas was most easily approached above the lesser curvature. After division of the lesser omentum longitudinally, the head of the pancreas was brought forward, and a grayish-yellow tumor about the size of a walnut was resected. The bleeding was profuse, but was readily controlled. The pancreatico-duodenal lymph glands were enlarged, and were removed. Other enlarged glands near the spinal column were not disturbed. The abdomen was closed without drainage. Recovery from the operation was prompt. Thorough microscopic examination of the tumor showed it to be tuberculosis of lymph glands lying in the pancreas. The other lymph glands, which were removed, were also tuberculous. As the patient gave no evidence of tuberculosis elsewhere in the body, Sendler looked upon this case as one of primary pancreatic tuberculosis. It possesses an additional interest, in that lymph glands in the pancreas have not heretofore been recognized.

Another patient, also a woman, who had suffered for years with epigastric pain, vomiting, and loss of appetite and flesh, presented in the region of the stomach, extending toward the left from the median line, a rounded, tender tumor, which, under narcosis, was somewhat movable. Under the impression that a carcinoma of the stomach existed, laparotomy was performed. After division of the lesser omentum it was seen that the whole pancreas was swollen, of a gray color, and very hard. The head especially was nodular. The other abdominal organs appeared healthy. The tumor was considered an inoperable carcinoma, and the abdomen was closed. There was a good recovery from the operation, but the condition of the patient grew worse until death was expected. Then, without known cause, the symptoms gradually disappeared until, at the end of a year, she was again in good health. Three and a half years later, a greatly diminished tumor could be felt in the original situation. This case demonstrates the existence of a benign chronic inflammation of the pancreas which may be recovered from.

Biondi, who has also made a study of this subject, considers that the surgery of the pancreas has remained undeveloped on account of (1) the difficulty of diagnosis due to the similarity of symptoms arising from disease of the pancreas and of neighboring organs; (2) the difficulty of operating upon the pancreas on account of its tendency to bleed and its friability. Total extirpation of the pancreas is absolutely fatal. Most of the operations performed upon it have been for cysts. He himself had removed a fibro-adenoma of its head with success.

By a series of experiments upon dogs he had determined: (*a*) If the duct is not disturbed a portion of the head of the pancreas may be removed. (*b*) If the whole head is removed it is impossible to bring the pancreatic juice into the intestine, and death therefore follows. (*c*) Pancreatic juice can indirectly cause peritonitis, and its escape into the peritoneal cavity is therefore to be avoided. (*d*) No animal, the whole of whose pancreas had been removed, lived more than twenty-three days. Biondi considers that surgical interference is indicated in cysts, hemorrhages, suppurations, localized areas of fat necrosis, primary tuberculosis, calculi, and benign tumors of the head. An exploratory laparotomy is often necessary to establish the diagnosis. (*Deut. Zeitschr. f. Chir.*, vol. 44, p. 329, *Centralbl. f. Chir.*, No. 59, 1896.)

Accident Following an Injection of Iodin Into a Hydrocele.—CHAVOIX (*Gaz. Médicale*, Jan. 16) mentions an instance in which a hydrocele was tapped and injected with 200 grammes of a fluid containing iodin. Eight days later the patient was taken with violent chills, and petechiæ appeared all over his body. Later there was epistaxis and hematuria, followed by hiccup and fever.

THERAPEUTIC NOTES.

Sage as an Antisudorific.—KRAHME (*La Médicine Moderne*, Jan. 13) calls attention to the fact that the tincture of sage, given in doses of twenty drops in the morning and forty in the evening, has given him excellent results in the treatment of the annoying night-sweats which often accompany pulmonary troubles. In thirty-eight cases it failed only twice to give relief. The effect was obtained only during the administration of the medicine, and as soon as it was withheld the sweats returned. No ill effects were observed from its use. Instead of the tincture, an infusion may be made by using one teaspoonful of the dried leaves to a pint of water.

Internal Esophagotomy.—WEBER (*Centralblatt f. Chirurgie*, No. 3, 1897) has collected all the known cases of internal esophagotomy since 1861. There are are twenty-five of these. As regards instruments, those which cut the stricture from above downward are bad, as it is impossible to tell how far the instrument will cut. The incision should be made from below upward. The best instrument is one devised by Schiltz, in which the blade is protected and passed through the stricture. It is then projected to a known distance, and is drawn upward, cutting its way through the stricture. Several shallow cuts are better than a single deep one. One can cut to a depth of two millimeters without danger.

The operation has usually been performed for strictures resulting from the swallowing of some caustic material. It has three times been performed for carcinoma of the esophagus, and without bad effect. It is especially indicated in strictures which are too low down to be reached from the neck, and which implicate only a portion of the esophageal wall.

Pellotin as a Hypnotic.—LONGSTEIN (*Centralblatt f. innere Med.*, No. 3, 1897) saw a deep collapse, which lasted half an hour, follow the subcutaneous injection of one-sixth of a grain of pellotin in a two-per-cent. solution.

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THE TUBERCULOSIS QUESTION IN NEW YORK.

THE more thought and inquiry that is given to the practical application of the recent enactment of the Board of Health, the more the conviction grows that the ominous and threatening wrongs that have been conjured up are but creatures of a diseased fancy—nightmares of an unfounded suspicion. Self-glorification is not the motive, nor is there any inherent tendency to alarming bacteriological edicts, officiousness of inspection, or presumptuous instructions to patients. On the contrary, the wise and judicious manner in which the Board has been applying, for the past four or five years, the very regulations about which now so much effort is being made to stir up commotion, is an earnest of how they will be administered in the future.

Criticism has been offered because the Board has not enforced to the letter its rule regarding expectoration in the street cars, elevated stations, and other public places. In answer to this it may be said that there is no surer way to make a good law unpopular than to enforce it offensively. Enactments of Boards of Health are not for the purpose of affording display of arbitrary power. No law can be enforced very long in any community unless it has the moral support of the best element of that community. And least of all can regulations concerning hygiene and sanitation meet with success unless the public approves. The campaign, therefore, becomes one of education, backed up by a wise enforcement of law whenever it becomes necessary to teach the lesson in the more peremptory way. The placing of the regulations under discussion in the Sanitary Code was simply conferring the power to apply the whip in cases of persistent ignorance or obstinate rebellion.

The New York public has been learning the lesson, and is now ready to accept the conclusions; but opposition suddenly looms up from a most unexpected quarter—the medical profession. Hypothetical questions of might and right, aroused by fear of arbitrary power, and of injured rights could be argued *ad infinitum*. But to what good? No complaints are made now regarding the Board of Health regulations in the conduct of scarlet fever, diphtheria, measles, smallpox, etc. What reasonable ground is there to fear that useless display of power or officiousness of inspection will be practised in a similar control of tuberculosis? It is an innovation, to be sure, but it is in the line of progress, and the medical profession should welcome it as a proffered assistance in its efforts to combat the greatest enemy of mankind. The following editorial comments in the New York *Herald* of February 26th, coming as they do from the lay press, indicate the feeling of the general public on the subject: "In large cities physicians are required to give notice to the health authorities of cases of certain infectious diseases, the mortality of which is small compared with the mortality of consumption. There is every reason, therefore, why the New York Board of Health should be vigorously sustained in its endeavor to arrest the spread of tuberculosis."

THE NEED OF INSTRUCTION IN ETHICS IN OUR MEDICAL SCHOOLS.

AT the last meeting of the British Medical Association there was much discussion in the Section on Ethics concerning the local organization of the profession. When trying to explain the present-day want of *ésprit du corps* and lack of consideration among physicians in their conduct toward each other, Dr. Alexander Stewart struck the keynote of the whole subject when he said:

"I venture to think that the disappearance of the apprenticeship system has had much to do with the breaking down of the barriers which regulated the relations of neighboring practitioners—if they were ever there to break down. That system had at least this one advantage, that it accustomed the aspirants to the medical profession to the ethics and traditions of the profession before they became actually members of it. Whether it produced a higher type of practitioner than the system which has displaced it is a subject on which it would not become our modesty, who are the product of such system, to dogmatize. What more immediately concerns us now is that hundreds of young men are entering the profession every year—generous, high-minded, imbued with the enthusiasm of youth—crammed full of book knowledge, eager for opportunities of putting it into practice, but often ignorant of other things which would be good for them to know."

The apprenticeship system is irrevocably gone, it is true, and we give nothing in its place. In old student days, when we studied, talked, worked, walked, and drove with our preceptor, we were brought into closest contact with a living, struggling member of the profession we were about to enter. We knew his successes and failures, his joys and griefs, and perplexities. We heard him argue his problems logically, and deliver his opinions with judicial precision. Of course he made mistakes, but we learned more about real vital issues and human nature with him in one week than the student of to-day learns in four years.

On graduation at the present day, how much do students know of the actual conduct of practice; how much of that subtle personal equation so indispensable to success? Men graduate now with a better scientific and theoretical outfit than ever before, but a man may starve on such an equipment. Unless he knows how to conduct himself toward the public, his patients and his professional brethren, he will fail in spite of his acquirements. In the system of medical education now in vogue, this knowledge comes, if at all, only by experience, and hence but few attain material success, and fewer still professional distinction.

With our present large medical schools and classes, anything like personal acquaintance, to say nothing of intimacy, between professor and scholar is impossible. The influence of the teacher is scientific only; in no sense is it moral or paternal. In his teachers, the student sees the successful men and, with them as ideals, with never a word as to the trials, exactions, and hardships of professional life, he leaves the school and is launched on what he believes to be a roseate sea of applied science.

If luckily he gets a hospital appointment his awakening is deferred for a year or two; but it comes, and with it a smirching or shattering of ideals. Were the history of each class known we would find its track strewn with derelicts; men too poor in money, men too poor in brains, but, more than all, men scientifically well fitted for their work who, had their tutelage been more personal and confidential, would have turned back before it was too late or would have pushed on to moderate success through obstacles of which they were forewarned and for which they were equipped.

A reversion to the old apprenticeship system is impracticable, but something should be given in its place. To those students who cannot be dissuaded from entering an over-crowded profession, should be given, sometime during their course of study, a series of plain practical talks, by some member or members of the faculty, which will open their eyes to things which books and laboratories cannot teach, a course of future conduct which will tend to make them respected, self-respecting and, haply, materially successful physicians.

ECHOES AND NEWS.

The New York Hospital Training School.—At the annual reception and graduating exercises this year of the New York Hospital Training School for Nurses, twelve graduates received diplomas and badges.

Legal Objection to Vaccination.—The Supreme Court of Wisconsin has handed down the decision that a person who "deems vaccination morally wrong and in violation of the laws of God" is exempt from compulsory vaccination in that State.

A New Combustible.—The *Cincinnati Enquirer* gives an account of a new compound, the invention of John Floyd, which ignites by the slightest friction against any hard surface. No explosion occurs, but the substance burns with a steady, blue flame, and gives out intense heat until consumed. There is no known substance that will extinguish it.

Obituary.—Dr. John Kirby, one of the physicians in charge at the New Jersey Hospital for the Insane, near Trenton, died February 27th, aged seventy-one years. He had been connected with the hospital since 1876. Before coming to Trenton he practised medicine at Salem, N. J. Dr. Kirby was graduated from the University of Pennsylvania in 1848.

An Aged Medical Student.—The Maine Medical School at Portland, Me., boasts the oldest medical student in the country. He has just entered upon the three-years' course, and when he receives his degree of M.D., will have passed his sixtieth milestone. He is described as a gracious old-school gentleman with a kindly face. He is an ex-minister of the Baptist persuasion.

Marriage, Birth, and Death Certificates.—A bill is now before the New York legislature providing that a fee of twenty-five cents shall be paid by the municipality where a marriage, birth, or death has occurred, to the party making the proper certification of the occurrence. A like charge of twenty-five cents shall be made for every copy of such certificate furnished by the municipality to parties desiring them.

Serum Treatment of the Plague.—Professor Yersin has now in readiness a large number of immunized animals, and is about to apply, at Bombay, the serum treatment of the plague on a large scale. Experts from nearly all the civilized countries have gone to Bombay to scrutinize the effects of this treatment. If the experiment proves successful, it will be of inestimable value in establishing the great principle of serum-therapy.

Infectious Diseases in St. Louis.—The Board of Health and Health Commissioner of St. Louis have decided to double the number of depots at which physicians may obtain culture tubes, diphtheria antitoxin, etc. Circulars are now being prepared announcing eighteen new stations at which will be found culture tubes, diphtheria antitoxin, sputum bottles for suspected tuberculosis, and sterilized glass slides for collecting blood for typhoid fever tests.

A New Building for the Detroit College of Medicine.—The old home of the Detroit College of Medicine, which was unfortunately destroyed by fire some two months since, is to be rebuilt, on the former site, and considerably enlarged. The contract has been let, and the new edifice will be completed by the beginning of the autumn session. Temporary use is made of the adjacent laboratories and hospital for the remainder of the present term.

The Corset Habit.—At the Academy of Medecine of Paris the question of corsets has been to the fore. M. Laborde opened the discussion, and illustrated his remarks by X-ray photographs and the exhibition of a hygienic corset. M. Lucas Championnière, however, said that the corset in question was nothing but an abdominal belt, and condemned it on the ground that its constant use enfeebled the muscles of the abdominal wall.

Expert Testimony in Criminal Trials.—The New York *Times*, in commenting upon this subject, wisely says: "If public provision is made for expert testimony, it should be in behalf of the court, and for the purpose of getting independent and unbiased evidence for the enlightenment of both judge and jury, and not for the purpose of supporting one side of a case. Where it is necessary to establish scientific facts, hiring opposing experts to dispute over them is a tedious and costly as well as an unsatisfactory way of accomplishing it. What is needed is entirely competent and disinterested experts to tell the court and jury what the facts are, regardless of their effect upon one side or the other of the trial."

Editorial Comments on the Action of the New York Board of Health in Connection with Tuberculosis.—*Pediatrics* says: "We believe that the action of the Board of Health is timely to a degree, and in no way can we subscribe to the criticism that has come from certain quarters of the profession that we are not yet ready for such fin-de-siècle legislation. A judicious, temperate, and determined enforcement of the newly-framed rules will enhance the faith and trust that the citizens of this municipality have in its ability to guard their health and their lives. The action marks a step forward in the annals of civilization, and we believe that the example will be promptly followed by health boards of other cities.

Nansen on the Prevention of Scurvy.—Dr. Nansen is of the opinion that on his recent Arctic expedition he avoided all trouble from scurvy by simply preparing his provisions with the utmost care, being convinced that spoiled meat and fish were the cause of the malady. Dr. Torup, professor of physiology at the University of Christiania, had informed him that he had come to the conclusion that in the decomposition which occurs in meat that has been improperly or carelessly preserved, poisonous matter allied to the ptomains was developed, which, when partaken of, produced scurvy. Acting upon this suggestion, Nansen had paid particular attention to the selection of provisions in his equipment, and is inclined to subscribe to Torup's opinion.

Discovery of the Germ of Yellow Fever.—There seems to be no doubt of the fact that Giuseppe Ganarelli has discovered the bacillus of yellow fever. After studying with Celli at Rome, Roux at Paris, and Behring at Berlin, he was appointed in July, 1893, director of the Institute of Hygiene at Montevideo, Brazil. During the summer of 1896, for the purpose of studying yellow fever at the lazaretto, he went to the island of Flores, where he performed a large number of necropsies, and was himself stricken with the disease. Later, he pursued his investigations at Rio Janeiro, and succeeded in discovering the bacillus. He then occupied himself in the preparation of serum-antitoxin, and in these experiments inoculated over 2,000 animals. The results of his treatment are pronounced definitely convincing, but the details are for the present concealed for the reason that a prize of $150,000 offered by the Brazilian Government awaits the discoverer of a cure for yellow fever.

Abnormal Development of the Right Arm of a Child.—Dr. Goldstein, of the New York Polyclinic, recently presented at the clinic of Professor Fowler a child who has in her right arm two distinct humeri, each articulating with separate glenoid fossæ of the scapula; three ulnæ, two radii, and three perfectly formed hands. Each of the hands has four perfect fingers and each a perfect thumb. Not only this, but every muscle of every finger and thumb is under the control of the girl, and she can write and perform other operations with any hand. The girl is quite sensitive regarding her deformity. She is bright and studious, but dislikes attending school because she becomes so great a curiosity among her little classmates. Frank Martin, an expert medical photographer who is employed by the Polyclinic, has recently made some skiagrams of the arm, and these plainly show the existence of the distinct bones, humeri, ulnæ, and radii, and the manner in which the three hands are attached to the wrist.

Doctors' Bills Must Be Paid.—The New York legislature has under consideration a bill providing for the payment of debts, as follows: Every executor and administrator must proceed with diligence to pay the debts of the deceased according to the following order: (1) Debts entitled to a preference under the laws of the United States. (2) Taxes assessed on the property of the deceased previous to his death. (3) Debts of the deceased, because of services rendered and materials furnished by physicians, pharmacists, nurses, and undertakers. (4) Judgments docketed, and decrees entered against the deceased according to the priority thereof respectively. (5) All recognizances, bonds, sealed instruments, notes, bills, and unliquidated demands and accounts. Preference shall not be given in the payment of a debt over other debts of the same class, except those specified in the fourth class. All debts specified in the third class shall become due upon the death of the deceased and shall be paid within ninety days thereafter.

The New York University Medical School.—The long contemplated combination between the University of the City of New York and the University Medical School has been formally effected. The title to the Medical School property has been formally transferred to the Council of the University. This gives it absolute jurisdiction over the Medical School and completely amalgamates it as a department of the University. The University Medical School was established in 1841, and is one of the old medical institutions of the country. The property, situated in East Twenty-sixth street, is complete in every particular, and in the course are embraced eighteen departments. The value of the buildings is estimated at $300,000, which, with an endowment fund of $100,000, makes the value of the gift amount to $400,000. The medical school for many years has been practically under the jurisdiction of the University Council. It has been directly under the control of a board of trustees, but its action has been subject to the supervision of the council.

The Health Board of Greater New York.—In commenting on the provisions of the new charter with reference to the Health Board, Dr. Stephen Smith says: "It is especially provided that of the three commissioners appointed two shall be physicians and one a layman, and that the layman shall be president of the board. Under no consideration can a physician hold that office. Thus a lawyer, grocer, cobbler, pedler, or any tramp, just so he has no medical knowledge, is declared qualified for the position, and the only disqualification is being a physician. In defence of this the superannuated theory is set up that a physician has no executive or business ability; but experience has proved that this is a fallacy. The president of the National Board of Health is a physician, and the report submitted by him to Congress was declared a model of accuracy and conciseness." As a remedy for these evils, Dr. Smith suggests that the charter be so amended as to provide for the representation of the three essential requisites, namely, medical science, sanitary engineering, and law, in the Health Department, and to that end he advocates the appointment of three physicians, one lawyer, and one sanitary engineer, all of ripe experience and residents of the boroughs of Manhattan, Brooklyn, Bronx, and Queens as commissioners, with the health officer and the president of the Police Department as ex-officio members of the board, so as to provide a restricting power, the president of the board to be elected by the commissioners themselves.

Medical Aid Societies in Austria.—A meeting, which brought together about 1,000 medical men from all quarters of Vienna, was held on February 9 for the purpose of protesting against the Government proposal to make insurance against sickness obligatory on employers and tradesmen. Dr. Scholz quoted statistics, showing that, according to the conditions of medical practice, which either existed, or may be expected very soon, it is inevitable that only one medical man in six will be able to make a livelihood. He reminded his hearers that they were in duty bound to refrain from intensifying the hardships of the situation by unprofessional competition. He was of opinion that every medical man should be employed by the State, and that the profession should be efficiently organized. Dr. Horz said the Government proposal to establish medical aid societies among the middle classes, if carried out, will be the ruin of the medical profession; the needy practitioner suffering from the stress of competition and inadequate remuneration will be only too likely to disregard ethical considerations. The present system of treating club members is objectionable, for it leaves the patient no choice in the selection of his adviser. Moreover, no medical man can make two hundred diagnoses in a day and give the requisite attention to individual cases. As a result the following resolutions were unanimously adopted: (1) The system under which members of clubs and friendly societies combine to obtain medical attendance is opposed to the interests both of the patient and the medical officer; (2) the proposal to extend the principle of insurance against sickness and to render it compulsory on employers of labor and tradesmen will have a disastrous effect on the medical profession; and (3) the "free-choice" system under which patients have the option of selecting their medical attendants is preferable to the existing method.

State Board of Medical Examiners.—The law regulating the appointment of medical examiners is being modified by the New York Legislature as follows: There shall continue to be three separate State boards of medical examiners of seven members each, each of whom shall hold office for three years from August 1st of the year in which appointed. One board shall represent the Medical Society of the State of New York and the New York State Medical Association, one the Homœopathic Medical Society of the State of New York, and one the Eclectic Medical Society of the State of New York. Each of these four societies shall at each annual meeting nominate twice the number of examiners to be appointed in that year on the board representing it. The board representing the Medical Society of the State of New York and the New York State Medical Association shall be composed of members from each of such organizations, to be appointed as follows: At the annual session of the New York State Medical Association held during the year 1897, nominations shall be made for all vacancies occurring in such board, by expiration of term, during the year 1898; and thereafter the New York State Medical Association, and the Medical Society of the State of New York, shall each be entitled annually to the appointment of one member. In the years when three members of such board are to be appointed, the appointment of the extra member shall alternate between such two organizations; but when three members of such board are next to be appointed, the extra member shall be appointed from nominations made by the New York State Medical Association. All vacancies occurring, otherwise than by expiration of term, shall be filled by appointment from the organization to which the member belonged, whose office is vacated. The names of nominees for appointment to such State boards shall be annually transmitted under seal by the President and Secretary prior to May 1st to the regents, who shall, prior to August 1st, appoint from such lists the examiners required to fill any vacancies that will occur from expiration of term on August 1st.

CORRESPONDENCE.

A PRECOCIOUS MOTHER.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: As an instance of precocity, I think the report of the following case may be of interest. On January 28, 1896, I attended in labor a young mother of twelve years and ten months of age. I ascertained that she had menstruated but twice prior to her marriage. She was fairly well developed for a child of her age, but fortunately for her labor came on at about the end of the seventh month. The babe was born breech first, and although living before labor set in, died during the expulsion. Yours truly,

WM. M. FINDLEY, M.D.

ALTOONA, PA.,
February 8, 1897.

CRETINS IN AMERICA.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: Will you kindly allow me the use of your columns to ask for information on the subject of cretinism in America? I have been detailed by the Pediatric Society to take part in the discussion on *Internal Secretions* at the Congress of American Physicians and Surgeons at Washington, on May 5th, and I am anxious to present the experience of American physicians on the use of the thyroid extract in the treatment of cretinism. I wish brief statements, (1) of the name, age, and sex of the patients; (2) of the length of time the thyroid extract has been given, and with what results; (3) whether any case cured by treatment has been able subsequently to abandon the use of the extract; and I would also like to have photographs showing the effects of the treatment.

I shall of course give full credit to any of my colleagues for the information they may kindly furnish. I have the details of the cases already published in this country, but shall be glad of any additional data as to the subsequent history. Very truly yours,

WILLIAM OSLER.

1 W. FRANKLIN STREET,
BALTIMORE, MD., March 5, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondeut.]

MEETING OF THE NEUROLOGICAL SOCIETY—ARSENICAL NEURITIS IN CHOREA—PRIMARY NEUROTIC ATROPHY—HYSTERICAL PARALYSIS—SPASTIC DIPLEGIA—MEETING OF THE PHILADELPHIA COUNTY MEDICAL SOCIETY—THEORY OF THE MOVEMENT OF THE NEURON.

PHILADELPHIA, March 8, 1897.

AT a recent meeting of the Neurological Society Dr. Alfred Stengel presented a case of arsenical neuritis. The patient, a child aged five years, was under treatment for chorea, and had been taking Fowler's solution of arsenic in 10 minim doses three times a day. The improvement was so marked that he was discharged from the hospital. About one month later the child was brought back with symptoms that pointed towards the toxic influence of arsenic either on the peripheral nerves or the cord.

Two cases of primary neurotic atrophy, interesting from their rarity, were reported, one by Dr. Burr the other by Dr. Dercum.

Spastic diplegia occurring in four children of the same family was reported by Dr. F. X. Dercum. The father had been married three times. The children of the first and second wife were normal. By the third marriage there were four children, all epileptics, and three of them showed the symptoms of spastic diplegia. In each case the child at birth was perfectly normal, but within a year or so the conditions mentioned made their appearance without apparent cause, save in one instance when an attack of measles seemed to bear a causal relation.

An interesting case from the standpoint of diagnosis was shown by Dr. Spiller. The history of the patient, a man about thirty-five years of age, prior to the year 1891 is entirely irrelevant to his present condition. During the summer of that year at Atlantic City, N. J., he rescued two men from drowning after supreme effort and barely escaped losing his own life in the attempt. He was able to return to Philadelphia the same evening, however, and that night performed the usual routine of his occupation on one of the leading daily papers. On the morning of the next day upon attempting to rise from his bed he suddenly fell unconscious, but remained in that condition for a short time only. On returning to consciousness he found himself unable to move the entire right side of his body, and while cognizant of what occurred about him was unable to speak or call for assistance. He was able before the attack to converse in, and write fluently, Danish, Swedish, English, French, and German. When found he was removed to the hospital where examination revealed complete anesthesia of the affected side to the median line in addition to the loss of power already mentioned. His aphonia persisted, and he was unable even to understand any of the languages with which he was formerly conversant except his mother tongue, Danish. Speech, however, was gradually regained, at first in the Danish language, and afterward as if learning them all anew the other languages were recalled. The hemiplegia has greatly improved, *i.e.*, he is able to walk with a typical post-hemiplegic gait and power has been restored in great degree to the affected arm. On attempted motion of this member there was developed and is still present a marked coarse tremor. This has been of such gravity, and has assumed such proportions in the eyes of the patient that he has requested that the arm be amputated. In fact he attempted suicide by shooting because of his depression due to a refusal to comply with this request on the part of the attending physician. There never was any interference with genito-urinary function. In the discussion of the case Drs. Sinkler and Dercum confirmed the diagnosis given by Dr. Spiller, *i.e.*, traumatic hysteria.

At a recent meeting of the County Medical Society Dr. F. X. Dercum read an exceedingly interesting paper on "The Theory of the Movement of the Neuron as applied to Normal and Pathological Mental and Nervous Processes." After outlining the development and history of the neuronic theory he explained the application of it to such conditions as hysterical paralysis, sleep, perception, insanity, etc.

The paralysis of hysterical type is due to the severing of the connection between the cortical and spinal neuronic interdigitations which hypnotic suggestion might restore indirectly through auditory stimulation. Sleep is the decrease of neuronic volume through fatigue. Memory is the permutation or combination of neura first affected by external stimuli through the various perceptive channels and recalled by similar stimulation in whole or part. Insanity is a pathological combination of the neuron.

OUR PARIS LETTER.

[From our Special Correspondent.]

PREVALENCE OF DIPHTHERIA IN ADULTS—ANGINAS DUE TO DIPHTHERITIC INFECTION—THE TOXICITY OF EEL SERUM—THE EXAMPLE SET BY THE "MEDICAL NEWS" IN THE SIMPLIFICATION OF SPELLING—CHRONIC INTOXICATION FROM THE PRESENCE OF PLANTS IN SLEEPING ROOMS—THE MEDICO-MOSLEM MEMBER OF THE CHAMBER OF DEPUTIES.

PARIS, February 10, 1897.

THE analysis of some 320 cases of diphtheria in the adult treated at Lariboisiere Hospital during the past three years brings forth the following interesting conclusions from Dr. Gougenheim, who made his report of them to the Medical Society of the Hospitals of Paris on January 29. (1) Diphtheria in the adult is more common than has been believed to be the case up to this time. (2) It is unrecognized because of its comparative mildness, the frequent failure to make bacteriologic examinations, and because its symptoms differ most of the time very little from those observed in ordinary acute angina, or in the pultaceous follicular or herpetic forms. (3) The larynx is rarely invaded, and the symptoms of this invasion when it does occur are never so serious as in the child. (4) Submaxillary adenitis is very common in the adult. It usually disappears by resolution, but the glands may suppurate. When this happens the pus usually contains only streptococci and staphylococci, except in hypertoxic cases, when the Löffler bacillus has been found. (5) Diphtheritic paralysis in the adult is rare; when it occurs it is of short duration. (6) The Löffler bacillus found in cultures from the cases may be short, medium, or long in size without this marked difference of appearance having any seeming significance as to the gravity or mildness of the disease. (7) The finding of other associated microbes does not render the prognosis more grave in the adult, though it always does in the child. (8) The contagiousness of diphtheria in the adult is very evident. We have observed little epidemics of it in a mild form run through the hospital wards. In its transmission this way it may affect children, hence the necessity for careful prophylactic measures. (9) Albuminuria is a frequent symptom of diphtheria in the adult, as it is of all the infectious fevers. It does not seem to make the prognosis more grave. (10) Cure is often spontaneous, but serumtherapy is usually indicated. Small doses of serum usually suffice, but in serious cases large ones should be given at once. There are certain refractory cases in which the serum does not act.

It is growing more and more common here in Paris to attribute nearly all anginas to diphtheritic infection. Of course cases are pointed out in which the growth of the membrane is evidently due to the exaggerated action of a very virulent form of streptococcus, and a number of fatal instances have been reported where the case from beginning to end does not seem to have been more than a streptococcic infection. Dieulafoy has recently called attention to some cases, on the other hand, usually described as herpetic angina, in which most of the classical symptoms of diphtheria were absent, which showed scarcely any signs of membranous formation, yet in which the Klebs-Löffler bacillus was at work. As yet gross differences in the morphology of the bacillus, such as described by Gougenheim in his report, do not seem to correspond to any fixed variations in the virulence of the bacillus or the gravity of the symptoms occasioned by it, but one is tempted to think that further study of the family of bacilli that is evidently at work will lead to important bacteriologic distinctions as to groups and types.

Profs. Chas. Richet and J. Hericourt, whose experiments with the serum of animals as long ago as 1888 attracted a great deal attention, who were, in fact, the first to demonstrate the practicability of serum-therapy after Behring's original investigations had shown the properties of serums, have shown before the Society of Biology a simple, easy, and striking method of demonstrating the value of serums, toxic and antitoxic, before a class. The serum used is that of the eel, which, in the dose of a cubic centimeter per kilo of animal, is fatal to rabbits in four or five minutes. The same serum injected into dogs does not kill them, but produces twenty-four to thirty-six hours of malaise, and then the animal recovers. If five cubic centimeters of the serum of a dog of medium size, which, after having received a dose of one cubic centimeter, has recovered, be injected into the rabbit some time before, what would otherwise be a rapidly fatal dose of eel-serum scarcely affects the rabbit at all. The experiments, as performed before the Society of Biology, were a very striking demonstration of the fact that what was reported by Phisalix some months ago with regard to the prophylaxis of serious results in snake bites by inoculation with eel-serum may have a more practical bearing than might be imagined at first sight. The whole series of observations thus far published with regard to serotherapy and vaccination against envenimation with the venom of serpents point to a vaccinal effect in the serums of certain animals under certain conditions that may have an extended application on the therapeutics and prophylaxis of disease in the future. The experiments may be repeated without trouble in any laboratory, a dog, two rabbits, and an eel being all that is necessary. The best method, according to Prof. Richet, to obtain the eel-serum is to open the heart and collect the blood in a pipette introduced into one of the cavities. At the end of an hour or two the blood in the pipette coagulates, and a slightly opalescent serum comes to the top that can be collected free from blood corpuscles.

The MEDICAL NEWS has been endeavoring to awaken interest in the simplification of medical spelling for some years, and its readers may be interested in the fact that the same problem practically, only for the language in general, not its medical glossary alone, is being brought into prominence over here just now. Prof. Richet, the professor of physiology and the editor of the *Révue Scientifique*, has asked for a vote of his readers as to the advisability of always substituting "s" for "x" and "i" for "y." Of course the stock arguments of obscuring the etymology of words and rendering their derivation and original meaning not easy to decide are being used here as they would be with us—arguments that would have more of meaning if there were any possibility of obscuring etymology at this late date in a language's history and with all the printed books that exist. The French have the advantage of us in this matter, however, for already once in their history they have defied the future and the past and simplified their spelling, and with the happiest results. Good luck to this and to any other movement looking to the simplification of the vehicles of the transmission of human thought!

Pet animals having had their turn of medical condemnation because of their liability to communicate disease, some of the other household favorites come in for their share of attention. It has long been a popular notion that plants should not be allowed to remain in a sleeping apartment over night. The symptoms usually reported as the result of their presence were so indefinite, and might so easily have been due to a number of other causes that usually not much medical faith has been pinned to the popular notion. At the last session of the Society of Biology, however, two cases seemingly of chronic intoxication from the constant presence in living apartments of the flowering laurel (laurier rose) are reported. The symptoms observed in both cases—the slow pulse, the dull headache, with loss of appetite and general malaise—are such as would come from the ingestion of a certain amount of the extract of the plant itself. In both cases the diagnosis of neurasthenia had been made until the removal of the plants put an end to the symptoms, and showed the etiology of the condition. During his last lecture, Prof. Gautier, the lecturer on medical chemistry in the medical school, spoke of a series of alkaloids resembling, in formula and general properties, collidine, which may serve to explain some of these effects. Collidine is a pleasant-smelling organic compound, generated during certain fermentations under special circumstances, which resembles much in odor the fragrance of flowers. When somewhat concentrated its presence is rapidly fatal to animals, even if present in only small quantities. It is at least as powerful in this respect as prussic acid.

Dr. Grenier, the new member of the House of Deputies from Pontarlier, continues to attract as much of public attention as ever. He became a convert to Moslemism while living among the Mohammedans in Algiers, some years ago, and wished to become a member of their priesthood. A slight deformity precluded this, so he returned to his native place, dressed in the Moslem costume of burnous and toga-like gown, and adopted all the religious customs of the strictest followers of Mohammed. He was extremely charitable to the poor of his district, and gave his medical services freely to the needy. He became very popular, was elected to the Chamber of Deputies, and has come to Paris to be the talk of the town. He has brought with him all his customs as to prayer in public with his face toward Mecca, frequent ablutions, and the outward respect for the symbols of authority required by the Moslem creed. The papers have said so much of him that one cannot be sure where joking begins and the truth ends. But his kissing of the steps of the tribune of the President of the House on bended knees before ascending to take the oath of office seems to be authentic, and is a type of the class of actions that have made him the butt of wit in the papers and the subject of all sorts of jokes and songs in the *cafés chantants*.

Meantime, the doctor does not seem to mind in the least the sensation he has created, and pursues the even tenor of his way, which seems to be a good way, as he shows special interest in bills on social and medical questions, consoling himself, I suppose, like a good Turk, with the very philosophic, perhaps, but not very consolatory maxim that "what is to be, will be."

TRANSACTIONS OF FOREIGN SOCIETIES.

Vienna.

THE SIGMOID FLEXURE USED AS A SUBSTITUTE FOR THE BLADDER—PAPILLOMATA OF THE INTERNAL ORIFICE OF THE URETHRA—A SPORADIC MUCOID ENTERITIS INFECTIOUS FOR CATS—AN INGENIOUS URINOMETER FOR SMALL QUANTITIES OF URINE —VARIATIONS IN THE TEMPERATURE OF THE SKIN NO INDICATION OF THE CONDITION OF THE UNDERLYING ORGANS.

EWALD showed a five-year-old boy to the Imperio-Royal Society of Physicians on January 29th. On account of ectopia vesicæ he had performed Maydl's operation. The abdomen was opened above the bladder, and the latter organ was thoroughly separated from the surrounding tissues, care being taken to avoid the ureters and the ejaculatory ducts. The bladder was then implanted in the sigmoid. The incision for this purpose was made longitudinally, and sewed up transversely in order to avoid too great tension. Recovery was perfect, and the child wet the bed for only a short time. He soon learned the new feeling of pressure of the urine and was able without difficulty to retain his water from six to eight hours. There were no unpleasant symptoms referable to the intestine or to the kidneys. Ewald looks upon the idea that pyelonephritis is sure to follow this operation as not well founded. He admits that the complication may arise, but it also occurs in cases of ectopia which are not operated upon. On this account an early operation is desirable.

KOLISCHER described a case of *papillomata of the internal orifice of the urethra* occurring in a woman. She had been treated for nervous symptoms arising apparently in the genital organs. An ordinary examination failed to reveal anything abnormal. By means of the cystoscope several fine papillomata containing blood vessels were discovered close to the left margin of the internal orifice of the urethra. Their peculiar situation explained the symptoms. After every attempt to micturate the patient experienced a painful pressure in the bladder which was sometimes followed by the passage of blood. This was due to the fact that the slender papillomata floated with the current of urine into the mouth of the urethra, where at the end of the urinary act they were grasped and painfully pressed by the constrictor muscle. By means of a slender pair of shears introduced through the tube of the cystoscope the papillomata were removed and bleeding stopped by a thermo-cautery. The patient was entirely relieved of her symptoms.

At the session of the Medical Club, held January 27th, **SORGO** described a case occurring in a young man who for six months suffered from *an enteritis with mucopurulent stools which often contained blood.* In the particles of mucus it was possible to demonstrate motile amebæ, many of which contained numerous red blood corpuscles. The patient improved after the use of quinin and injections of tannin. Three months after the treatment was begun the stools were normal. Sorgo was able to transmit the disease to a cat whose stools presented the same gross and microscopic appearance as those of the man. The case also possessed interest on account of its sporadic appearance. Sorgo rejects the division of ameba-enteritides, intertropical and non-tropical, preferring to divide the cases into those which are, and those which are not, infectious for cats.

JOLLES described a *urinometer devised by himself in order to test with accuracy the specific gravity of small quantities of urine.* The stem of the instrument has only ten divisions—from 1.000 to 1.010. Accompanying it are several metal rings, each one of which if slipped over the stem increases by ten points the value of the reading. Thus, if two of these rings are required to bring the stem down to the level of the fluid, the units marked on it will be those from 1.020 to 1.030; and, if the fluid reaches, for example, to the unit 4 the specific gravity of the urine will be 1.024.

At the session of February 3d, **HIEBEL** described the attempts made by several investigators to ascertain from the *variations in the temperature of the skin* the condition of the underlying organs. It was once believed that the skin is warmer over organs containing air than over those which do not contain air. If this were true it would be of considerable help in diagnosis. Further investigations showed that the rule was subject to an endless number of variations. No constant relation, for instance, was found between the temperature of the skin overlying the heart and that overlying the lungs; or between that of the skin over the stomach and that of the skin over the liver. The skin is warmer upon the affected side in acute pleurisy than it is upon the sound side. In old pleurisy, especially if tuberculous, this is reversed. In pneumonia and in seropneumothorax the skin on the affected side is also cooler.

At the session of the College of Doctors of Medicine, held February 8th, **REICHEL** spoke of the *lighter forms of endocarditis following acute rheumatism*, about one hundred cases of which he has had opportunity to observe. Extension of the heart's dulness is not an invariable sign of endocarditis, though it is usually present and associated with a rough murmur at the apex obscuring the first sound. A murmur which seems rather to follow the first sound is more likely to be of anemic origin. As an early symptom of the stenosis which follows repeated attacks of endocarditis Reichel mentioned a small pulse. Another sign is that of an increased first sound. The heart is affected in many more cases of acute rheumatism than one usually supposes. This is true, according to Reichel, in from eighty to ninety per cent. of the cases, where other authorities, *e.g.*, Bamberger, have given it as low as twenty per cent. Affections of the heart following gonorrhea are not unusually severer than those following rheumatism.

Paris.

DIFFERENTIAL DIAGNOSIS BY MEANS OF RADIOGRAPHS IN CHRONIC RHEUMATISM AND IN GOUT —SCARLATINA ERUPTION CONFINED TO THE FACE —DIABETES WITH BRONZING OF THE SKIN—STREPTOCOCCI WHICH ARE REFRACTORY TO THE ACTION OF MARMOREK'S SERUM — THEORY AND TREATMENT OF HYPERSTHENIC DYSPEPSIA—THE AGENT IN MEAT POISONING A BACTERIAL ONE.

At the session of the Academy of Medicine, held Januuary 18th, Potain and Serbanesco showed *radiographs of patients suffering from chronic rheumatism and gout.* In the former affection the condensing osteitis at the tips of the bones renders them more opaque. In gout, on the contrary, there are at the ends of the phalanges and metacarpal bones white spots surrounded by narrow dark aureolæ. By testing the various salts of which bones are composed it was found that calcium phosphate and carbonate and sodium chlorid are but slightly permeable to the X-ray, while sodium and calcium and magnesium urates are much more permeable. This explains why regions of the bones in which the urates have taken the place of the phosphates become more transparent. It also explains the formation of comparatively opaque zones by condensing osteitis. Radiography may therefore be of assistance in arriving at a differential diagnosis between gout and chronic rheumatism.

At the Medical Society of the Hospitals, January 29th, Lemoine mentioned *twenty-three cases of scarlatina* under his observation in which the *eruption was confined exclusively to the face.* The patients, as a rule, were admitted into the hospital for sore throat, with fever and a redness of the face. The fever fell within a few days, but the redness of the face persisted, and was soon followed by more or less marked desquamation. Several patients subsequently developed albuminuria, and even dropsy and signs of uremia. These cases apparently constitute a transition between scarlatinal sore throat and scarlatina with generalized eruption. Attention should be directed toward this variety of scarlet fever at the time of an epidemic, so that patients suffering from it may immediately be isolated.

At the session of February 5th, Remdu described a patient suffering from *diabetes with bronzing of the skin.* At autopsy the liver, kidneys, lungs, heart, skin, etc., contained granules of a deep ocher color. The circulating blood did not contain such granules, and there was nowhere any evidence of embolism. The granules were made up of ferric hydrate and were undoubtedly derived from the blood, perhaps by a peculiar action exercised by the cellular protoplasm upon the hemoglobin.

Jeanserau reported two similar cases, and Trousier reported a case of diabetes with hypertrophy and pigmentation of the liver, and pigmentation of the pancreas and skin. In this case the kidneys contained no pigment. In the opinion of most of those taking part in the discussion this ocher pigment is formed in the tissues and not in the blood.

Mery, at the session of the Biological Society held February 13th, stated that he had succeeded in isolating in various cases of scarlet fever *seven varieties of streptococcus* obtained from the throat, urine, blood, and a glandular abscess. Six of these proved absolutely *refractory to the action of Marmorek's serum,* which was administered in doses of from 5 to 10 c.cm. in the form of intravenous peritoneal and hypodermic injections. It was given both for curative and, especially, for prophylactic purposes. Two-thirds of the rabbits subjected to these injections died before the control animals.

At the session of the Therapeutical Society, held February 10th, Soupault proposed the term *hypersthenic dyspepsia* for the condition of hyperacidity of the stomach, because, as he believes, this condition is the expression of exaggerated activity of all the gastric functions. Besides secretory and sensory hyperasthenia there is also a motor hyperasthenia producing pyloric spasm and interfering with the evacuation of the chyme. This pyloric spasm and the attempts of the muscular coats of the stomach to overcome it are the cause of the majority of the functional disturbances of hypersthenic dyspepsia, the regurgitation of food, the eructation of gas, vomiting, and pain. If the cause is long continued dilatation may be produced. These cases often occur in persons of an excitable nervous temperament.

In the treatment of such cases it is absolutely necessary to avoid any intervention liable to excite the stomach. Recourse should be had to rest and nutritive enemata for a few days. No solid food should be given before liquid substances can be taken without pain. Later the diet may include jellies, meat powders, finely minced meat, vegetable purées, etc. Washing out the stomach is useful only at the period of stasis. Hot or cold compresses or mustard plasters in the epigastric region are of benefit. Electricity and massage are contraindicated. Alkalies if given are purely palliative measures; sedative and antispasmodics are of service and may be combined with warm baths.

At the session of the Medico-Legal Society, held February 8th, Pouchet spoke of the *accidents following the ingestion of spoiled meats.* Investigations have usually been conducted upon a toxicologic basis and have never given satisfactory results. Recently a physician who investigated an epidemic during which about fifty persons were attacked, with one death, became convinced that the symptoms were attributable to the consumption of spoiled pork. The most careful examination of this spoiled meat and of the excreta of two patients failed to reveal the presence of any toxic substance of vegetable, animal, or mineral origin; but from the meat a special microbe was isolated which proved to be the specific bacillus of the infective pulmono-enteritis of hogs. Inquiry elicited the information that an epidemic of hog cholera was raging at the time in the localities where the cases had occurred. These bacilli were not found in the excreta, but a virulent form of the bacillus coli was present.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting held January 5, 1897.

The President, Dr. Bernard Sachs, in the Chair.

ACUTE POLIOMYELITIS WITH INVOLVEMENT OF THE SEVENTH NERVE.

Dr. Terriberry presented a child, twenty months old, exhibiting this condition. It was a second child, and was born of healthy parents after a normal gestation and confinement. It was breast-fed and had developed normally. It walked without support at the age of seventeen months. It had never received any injury. On November 30, 1896, it was noticed to be restless and irritable, and the following morning there was high fever, with constant nausea and a profound prostration of the muscular system. The child appeared to be entirely free from pain and tenderness. When it was held up, the head fell on the left shoulder. Twenty-four hours later, the condition was not so severe. At this time the right side of the face was noticed to be unnatural, the eye being constantly open. It was not until the sixth day that it was able to balance itself on the feet. He had first seen the patient ten days after the onset of the attack. Examination then showed complete Bell's paralysis on the right side of the face. The right foot pointed outward, and there was a slight limp on this side. The knee-jerks were about normal. The galvanic current that could be tolerated produced good reaction on the unaffected side, but on the right side there was very slight reaction, and the formula was normal. Since that time the galvanic current had been applied two or three times a week. At the present time the eye was better and the limp was scarcely noticeable. There was slight flabbiness of all the muscles on the right side. The clinical picture presented by this case was quite typical of an acute poliomyelitis.

DR. JOSEPH COLLINS thought it was rather hazardous to make a diagnosis of anterior poliomyelitis in an infant who a month before had the beginning of such a destructive lesion, and who had now practically recovered. A much more probable interpretation would be an intoxication of the central nervous system, manifesting itself not only in the spinal cord, but in other parts of the nervous system, the infection not being sufficient to cause death of the ganglion cells. A fully developed anterior poliomyelitis was not compatible with the degree of improvement exhibited in this case.

DR. WILLIAM B. NOYES called attention to a class of cases that had been very prevalent of late, beginning with symptoms almost exactly like poliomyelitis, and characterized by unusually marked sensory disturbances, and recovering after three or four weeks. He could recall seeing since September about six such cases at the Vanderbilt Clinic. In these, the peripheral nerves were sometimes affected at the same time as the spinal cord. This would, perhaps, offer an explanation of the case just presented.

DR. TERRIBERRY said that in a neuritis of a mixed nerve one expected to find some sensory disturbance. There was entire absence of sensory disturbance in the case presented. He knew of no category in which the case could be placed except in that given—anterior poliomyelitis. The theory mentioned by Dr. Collins, of course, was recognized by all. Owing to the clinical features of the case he thought he was justified in so classifying it.

DR. COLLINS said that he would classify the case as an intoxication of the central nervous system. He believed pathologists stated now that the entire gray matter might be affected at the same time. It appeared to him to be a step backward to look upon the case as one of anterior poliomyelitis with bulbar involvement.

GRAVE'S DISEASE, WITH EDEMA OF THE EYELIDS.

DR. SCRATCHLEY, on behalf of Dr. Bishop, presented a woman suffering from Grave's disease. This condition had existed for four years and a half. The case was presented because of the edema of the eyelids, which had become much more manifest during the previous few weeks. Various methods of treatment had been tried, but the best results had followed the use of belladonna.

DR. J. ARTHUR BOOTH said that the kind of edema found in this case was not uncommon when the eyes were very prominent. In the case which he had reported previously there had been marked edema without prominence of the eyes. At the present time, he was experimenting with thymus extract in these cases.

COMPRESSION PARAPLEGIA IN POTT'S DISEASE OF THE SPINE, BASED UPON STATISTICS.

DR. V. P. GIBNEY read a paper with this title. He said that about nineteen years ago he had presented to this Society a paper on the same topic. The present communication included the cases seen since then. All authors agreed in relegating to laminectomy the cases apparently hopelessly incurable. It was true that in a few cases the results of operation had been extraordinarily good. He believed that iodid of potassium was an excellent remedy in these cases, and that it acted much more favorably when combined with proper support to the spine. He was accustomed to push the drug up to the point of tolerance. In a great many instances he also employed the Paquelin cautery. If one could secure rest in bed with traction on the head, he was convinced that recovery would be more rapid. He was still opposed to the use of electricity. The consensus of opinion seemed to be against the use of the term "compression myelitis," and in favor of the term "pressure paralysis."

The speaker said that he had been able to secure *final* results in 74 cases—33 males and 41 females. The disease was located in the cervical region in 5, in the upper dorsal in 38, in the mid-dorsal in 14, in the dorsal in 19, and in the lower dorsal in 8. There was no case in the lumbar region. Twenty-five of the 74 presented a small deformity, and 49 a prominent deformity. Four patients were over twenty-one years of age, 6 between twelve and fourteen, 9 between eight and twelve, 24 between four and eight, and 3 were under four years of age. The paralysis was recognized simultaneously with the deformity in 14; in 7 cases it was noted within three months, in 15 after six months, in 18 after twelve months, in 9 after two years, in 8 five years afterward, in 3 seven years afterward, and in 1 fourteen years after the deformity had appeared. The treatment consisted during the earlier years in the use of the Knight spinal brace, and, since 1879, chiefly in the application of a plaster of Paris cast with a snugly fitting jacket and a head-spring. In many cases of severe paralysis the wire cuirass or the Cabot frame was employed. Where there was much uncontrollable spasm, he had employed traction.

Forty-three of the cases were cured of the paraplegia, and the subsequent history showed that they remained cured. Eleven were improved at the time of leaving the hospital, and there was reason to believe that many of these were subsequently cured. Eight cases were unimproved and 13 died. Of the fatal cases, 4 seemed to die of myelitis. The longest duration of the paralysis was seven years, and recovery then followed. The shortest period was two months. Ten were paralyzed from four to six months. The average duration was about thirty-two months. Dr. Gibney said that in his former paper 58 cases had been reported. The total number reported by him was, therefore, 132.

A CONSIDERATION OF THE PARAPLEGIA OF POTT'S DISEASE WITH ESPECIAL REFERENCE TO THE RESULTS OF MECHANICAL TREATMENT.

DR. NEWTON N. SHAFFER presented a paper with this title, based on forty cases that had been treated among the poor in the out-patient service of the New York Orthopedic Dispensary. The treatment consisted in the application of the Taylor spinal brace, and keeping the patient in the recumbent position. The apparatus was adjusted to give firm support to the spinal column, but not to make special pressure. No internal medication was used. Thirty-two of the cases were under ten years of age, and 3 above that age, the oldest being forty-three years. Of the 40 cases, 33 were affected in the middle dorsal, upper dorsal, or cervical region. In 30 cases the disease had existed for five years before the occurrence of the paralysis; in 13 between one and two; in 1 for eleven, and in 1 for twelve years. It was not easy to determine just when the paralysis occurred in this class of patients. Of the 40 cases, 12 had abscess, and in 36 there was no *external* abscess. Four were benefited by opening the abscess, two abscesses opened spontaneously, two appeared after the occurrence of the paralysis, and one occurred after the paralysis had been cured. The deformity was slight in 14, marked in 21, and great in 5. The paralysis was no more severe in the cases having a great deformity. In 24 there was simply a motor paralysis; in 16 motor and sensory paralysis were combined. It was unusual for sensory paralysis to develop first in Pott's disease. The primary invasion of sensory symptoms, Dr. Shaffer said, always suggested malignant disease, a benign tumor, or some traumatic invasion of the spinal canal. In 14 cases the patients had been under treatment one year, or less, when the paralysis ensued. It should be remembered that these patients led a rough life, and that traumatism was extremely liable to occur. Paraplegia may occur even in cases most carefully and rigidly treated. There were three deaths among the 40 cases, but only one patient was still paralyzed at the time of death. This was a case of general tuberculosis.

There were 24 cases of simple motor paralysis, of which 21 recovered, and 3 were still under observation. There were 16 cases of combined sensory and motor paralysis, of which 11 recovered, and 5 were still under observation. Two patients died after recovery from the paralysis. Of the 32 recoveries, 15 walked well with exaggerated patellar reflexes, 5 walked well with normal knee-jerks, and of the remainder there was no record of the reflexes. It was evident from these observations that a large proportion of the cases of Pott's paraplegia would recover if the spinal column were adequately supported. Head-traction seemed to him useless except where the disease was very high up. He had also found that a plaster of Paris cast was not satisfactory because of its failing to give proper support. Of those remaining under observation about one-half had a reasonable hope of recovery. Of all the cases reported, only one had bed sores, and none had cystitis. Four patients had been under treatment from six to ten years, and were still paralyzed. It was probable that in these cases there had occurred a greater or less degeneration of the spinal cord, and, therefore, an operation was not likely to be of benefit. It would seem that after one year had elapsed, the chances of recovery rapidly diminished under mechanical treatment. A case of simple motor paralysis, it seemed to him, should not be operated upon. As long as the sensory tract was unaffected, surgical interference was not called for, and even where this tract was affected, the chances of recovery were excellent without such interference. The condition of the reflexes furnish a good indication of approaching paralysis. An exaggerated knee-jerk often announces the approach of paralysis, and is at least an indication that the patient should be kept quiet in bed. Whooping-cough, occurring in connection with dorsal deformity, is likely to be followed by a rapid increase of the deformity, and by the development of paraplegia. Paralysis from lumbar disease had been rare in his experience. Paraplegia might develop at any stage of the disease, even after apparent recovery. The average duration of simple motor paralysis was about seven months in these cases, and the average duration of simple sensory paralysis, ten months. In two cases the sensory paralysis, without vesical or rectal symptoms, lasted nineteen months and a half.

In closing, the speaker said that Pott's disease in the dorso-lumbar region, as well as confirmed rotary lateral curvature in this same region, might wholly arrest menstruation. He believed this clinical fact had not been noted before, yet he had records of four such cases.

DR. DE FORREST WILLARD of Philadelphia presented skiagraphs of two cases now under his care. He had hoped by their aid to obtain new light on the diagnosis and pathology, but this hope had not been realized. One was of a young boy, and the other of a young girl. There was no improvement in the boy for ten months, and just as he was about considering the advisability of an operation, some improvement was noticed. Now, after eight months, he was well on the road to complete recovery. The girl has been under treatment for only six months, and already a slight improvement had been noted.

After the brilliant results reported by Macewen and Horsley, he had felt that in the more severe cases there was hope of giving relief by surgical interference. His first three or four cases of laminectomy were successful, although not brilliant. Then came two deaths, one from shock, and the other a month after operation. This had led him to look up the statistics, and these had appalled him. He had collected 194 cases of operative interference for the relief of spinal paraplegia. The majority were in children. In four the result was not recorded. Of the 190, then, thirty-five per cent. were recorded as successful, but later reports showed that the symptoms returned in some of the cases. Sixty-five per cent. either died or were not materially improved. One-fourth of the cases operated upon died from shock within the first day or two, over one-third died within one month after operation, and forty-five per cent. died within the year—in other words, for a disease which does not in itself kill, and which is slow in progress, in nearly one-half the cases life appeared to have been positively shortened by operation. Laminectomy, therefore, was an operation which should only be undertaken in decidedly desperate cases. Some years ago he had made it a rule to employ careful mechanical treatment for at least a year before interfering surgically. More recently he had lengthened this period, but still he would not have the patience to wait for six years, as Dr. Shaffer had done. He believed the large majority of these cases were benefited by extension and fixation, at first in the recumbent position. He was also a believer in the administration of iodid of potassium, or of other alteratives, in these cases. Looking back over his thirty years of practice, he could not recall more than two or three cases of spinal paraplegia that were not walking, although, perhaps, not perfectly.

Regarding the technic of the operation, the speaker said that he had tried the U-shaped flap, but he had found that while it preserved the laminæ, it prolonged the operation. In the upper dorsal region the operation is simple; in the lower dorsal and lumbar regions it is exceedingly difficult and tedious. The hemorrhage consequent upon division of a large mass of muscles is very great. He had also noted that handling of the spinal cord was almost immediately followed by a tendency to collapse. He considered the operation justifiable in cases which resist proper mechanical treatment for a year and a half, and which show that the spinal cord is in a condition to transmit motor and sensory impressions; also in cases in which there is both sensory and motor paralysis without improvement.

Dr. Robert Abbe said he had felt for a long time that the cases upon which the surgeon should operate were those which the orthopedic surgeon gave up, and these were very few. The surgeon was reluctant to operate because of the danger of disseminating tuberculosis by the operation. He firmly believed that if nature had an opportunity she would surround the tubercle bacilli with a fibrous barrier which would localize the disease and prevent general infection. This doctrine of avoiding resection of tubercular parts applied with special force to the spine. Simple laminectomy was not especially difficult, although it was followed by great shock. He believed that the U-shaped incision and the free division of the muscles were responsible for much of the hemorrhage and shock. By simply incising along the side of the spine down to the laminæ, no muscles were cut through. The muscles are scraped away from one side, and the laminæ, with attached muscles, are drawn to one side. The laminæ could then be divided without undue hemorrhage. By this method the operation was extremely safe. If there was much handling of the cord there undoubtedly would be great shock. By picking up the dura he had been able to roll the cord to one side so that he could inspect its anterior surface without producing shock. There was, of course, much unavoidable manipulation if one would thoroughly remove the disease and cure the patient. The laminæ are not at all necessary to the support of the spine, but they may be missed if the bodies of the vertebræ are extensively destroyed. Even after primary union, a sinus is apt to form after a short time, owing to imperfect removal of the disease, and this sinus interferes with mechanical appliances.

Dr. Joseph Collins said that he had been taught that one of the most important diagnostic signs of compression paraplegia was an increase of the reflexes, and although this is the rule, yet in his own experience there was in a number of cases absence of knee-jerk and ankle clonus. He had, with Dr. Fraenkel, collected seven specimens of compression myelitis, three of which were cases of Pott's disease, to demonstrate this fact in cases in which a careful clinical history had been secured. This condition of the reflexes is not easily explained, but it seemed to the speaker that the theory propounded by Bastien in 1879 allowed of a more satisfactory interpretation than did any of the others. In fact, the theory founded on the "cut-off" influence existing between the reflex arc and the cerebellum seemed to have the greatest support. The report just made by Dr. Gibney of nearly fifty per cent. of recoveries should be sufficient to show that we had no right to subject the patient to such a hazardous operation as Dr. Willard had shown laminectomy to be. The degree of deformity he had found to have no apparent relation to the extent of the paralysis. He recalled a case in which there was no deformity, although the paralysis was extensive. He had observed the absence of menstruation in one case, and believed he had spoken of this fact before the Orthopedic Section two years before. Iodid of potassium was certainly useful in these cases, yet the use of this remedy, as some believed, to the exclusion of rational mechanical treatment, was to be deplored.

Dr. M. Allen Starr said that from experience with operations on the spinal cord for other conditions, he thought we should be very cautious about meddling with the cord, and that if it had been once damaged it was practically useless to place it in a favorable condition for recovery, as it did not seem to have the power of regeneration. He had been surprised at the remarkable improvement that had occurred in cases of almost total paraplegia as a result of careful mechanical treatment. It should make one careful in the prognosis given in all cases of compression paraplegia. It was very rare for him to see a case in which the tendon reflexes were not very markedly exaggerated, so that his experience did not at all coincide with that of Dr. Collins. The majority of observers, he believed, still continued to find the knee-jerks exaggerated and clonus present when the cord was compressed above the mid-dorsal region.

Dr. C. A. Herter said that the pathological conditions underlying the desperate cases of compression myelitis were such as to give very little hope of anything more than the most temporary relief from operation.

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ORIGINAL ARTICLES.

MASSAGE IN THE TREATMENT OF FRACTURES.[1]

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UNTIL very recently less advance had been made in the treatment of fractures than in any other department of surgical practice. This is the more remarkable on account of the frequency of this lesion, and it is accounted for by some[2] on the ground of the fear of suit for malpractice if any but the stereotyped methods are employed. As many writers state it can scarcely be denied that the usual method of treatment of fractures is far from giving entire satisfaction, but is regarded as a necessary evil.

Comparatively recently, the "ambulatory treatment" of fractures has received much attention. As to the meaning of the term ambulatory much confusion, it seems to me, exists. What is new in this method is not that the patient is allowed to walk about with crutches after the fractured leg is put up in plaster, but that the plaster is so applied as to act as a combination of an extension splint and an artificial leg, so that the patient walks on the sole of the plaster splint without the support of a crutch or cane. In common with many others I have tried this plan of treatment somewhat extensively in fractures of the leg, and with considerable satisfaction. Its advantages are that it maintains the general condition of the body, and is especially useful in the aged and alcoholic by preventing long confinement in bed. It prevents atrophy of the lower extremities and stiffness of the remoter joints (knee and hip), and it allows a certain class of patients to resume business at an early date. It clears the hospital wards but does not allow a day laborer to work much earlier than the former methods. It does not materially shorten the period of healing. It fails, therefore, to fulfil two requirements at which the improvement in the treatment of fracture should aim, namely, (1) a shortening of the time required for bony union, and (2) an improvement in the functional result when union is obtained.

The crippling of an otherwise healthy person for six weeks is bad enough in itself, but unfortunately this is not all or even the worst part of the usual plan of treatment, for when the splint is removed there is atrophy of the muscles, stiffness of the joints, and disturbance of the circulation; and a period, often longer than six weeks, may be required to obtain a perfect functional result for which a lifetime does not always suffice. It is claimed for massage that it fulfills both of the above requirements, and hence furnishes an improved method for the treatment of fractures. But, as Lucas Championnière, the apostle of this method, says, massage introduces into the treatment of fractures an overturning of our previous notions which it is necessary to justify. It is mobilization, represented by massage, versus immobilization, which since time immemorial has been the primary condition in the treatment of fractures.

Immobilization has been supposed to meet the requirements of the proper treatment of fractures on the ground that it (1) suppresses pain, (2) best permits the restoration of the original form of the member, (3) facilitates the repair of the fractured bone, (4) is the best means for the recovery of the normal function, (5) prevents or cures inflammation.

Championnière[1] attacks these premises seriatim and shows:

1. That only the primary pain, due to the movements of the fractured ends on one another, is suppressed by immobilization, and this not entirely for the latter is not absolute until callus binds the ends together. It, moreover, allows and favors a secondary pain in the neighboring muscles, joints, etc., which is largely due to the swelling from ecchymosis and edema.

2. That the statement that the restoration of the member to its original form is accomplished by immobilization is only relatively true, and especially so in the most important fractures, *i.e.*, at the ends of bones in which consolidation often takes place in a form different from the primitive one. Reduction only corrects the displacement imperfectly in many cases, and the latter may be reproduced by serous or bloody extravasations or by faulty apparatus.

3. That instead of favoring the repair of bone immobilization causes a scantiness of callus. We have all had experience of cases of delayed union in

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[1] Read before the Surgical Section of the New York Academy of Medicine, March 8, 1896.

[2] A. C. Wiener, "New Views of the Treatment of Fractures of the Lower Extremities," *Chic. Med. Recorder*, 1896, p. 96.

[1] Championnière; "Traitement des fractures par le massage et la mobilization."

which motion is one of the first things we prescribe to induce a healty reparative action, and the formation of sufficient callus. It is said that certain fractures in dogs will not heal with apparatus but only without it, provided that there be not too active motion.

4. That immobilization is the worst instead of the best condition to assure the recovery of normal function. In healthy muscles, ligaments, and joints, forty-eight hours of repose causes a tendency to pain on using, and so much more so if there is serous and bloody extravasation in these parts, following an injury. Immobilization has a bad effect not only on the injured part and its neighborhood, but on remoter parts, and even on the opposite limb in cases of fracture of the leg.

Atrophy of the muscles, stiffness of the joints, want of suppleness of the ligaments and tendons, and disturbance of the circulation, are effects of immobilization with which we are all familiar, and which require time and perseverance to overcome. Although long immobilization does not cause true anchylosis it does cause so much stiffness in a joint, especially in one near a fracture, due to infiltration of the ligaments and tendons, swelling of the synovial membrane and atrophy of the muscles, that the effect is nearly the same. And this effect is the more lasting the older the individual, so that after a certain age one never obtains a complete functional result after treatment of a fracture by immobilization.

5. That inflammation depends upon bacterial infection and not on movement, the danger of which lies in the repetition of the tearing and contusing of the tissues. Immobility only lessens the pain of inflammation.

Championnière adds that the absolutely exact return to the original form of the skeleton after a fracture is not as important as the complete return of the function of the joints, muscles, etc., a position that I think is sound though many may be inclined to question it on the false assumption that perfect position means perfect function after a fracture.

As to massage, the above-named author makes the following statements among others. (1) A certain amount of motion is favorable to the repair of bone. (2) Massage is complex therapeutically; it gives a favorable degree of movement and by many unknown ways causes the repair of bone to be rapid and regular. (3) Certain degrees of deformity contraindicate massage, at least its immediate application.

Movement is life to the soft parts and is necessary to the formation of callus. It assures more rapid and complete repair. Fractures of the clavicle and ribs heal almost invariably and very rapidly, though subjected to constant or frequent motion, and since the stone age fractures have healed in man, the apes, and lower animals, without treatment. Non-union in long bones, not immobilized, when it occurs, is not due to mobility so much as to the want of contact. If a fracture is absolutely fixed the callus may be so scanty as often to cause delayed union. But on the other hand there is a limit to the amount of useful movement, and there are conditions when all movement is contraindicated. The movement in or near a fractured part should be made by the surgeon and not in connection with the function of the part. When made by the surgeon it is useful from the very beginning of the treatment. The only obstacle is pain, but this is overcome by the massage, the principal means employed to provoke the slight movement.

Massage is the best means of causing slight movement without pain at the site of fracture and is, according to Championnière, the fundamental principle of the treatment of fractures. Massage is a broad term, and the particular form applicable to the treatment of fractures should be carefully studied as the discrepancies in results obtained by this method are attributable to the variations in the means employed. Massage should not be of the violent kind such as is often applied in old fractures, or after fractures have united. A surgeon can apply it better than a masseur on account of the preformed habit of the latter of using too much force, and the better knowledge of the complex injury, and of the anatomy of the part, possessed by the former. The index of the massage should be the absence of pain, for pain should not be provoked but relieved by the treatment.

The Effects of Massage.—The first effect as well as the first aim of massage is the disappearance of pain. This effect should be reached without causing pain in the act of massage, and is obtained by gentle, repeated, centripetal movements of the whole hand. Although hard to account for, the relief is probably due to the disappearance of exudation in the distended tissues and to a direct effect on the nerves, which also contributes to the hastening of repair. A second important effect of massage is the diminution of the swelling of the limb caused by the resorption of the ecchymosis and edema which ordinarily increase for the first five days, while if massage is applied daily from the first the swelling has about disappeared by the time it usually begins to subside, although at first between each period of massage the swelling may increase somewhat. Also, the secondary edema which often comes on after five or six weeks, especially in aged patients when the limb is first used, is conspicuous by its absence. This is due to the improved circulation following the early removal of the exudation and the continued massage.

Furthermore, the muscles are kept from atrophy, the joints and tendons from stiffness, the skin is soft and supple, and the return of the part to vital activity is rapid and satisfactory. The patient desires to resume the function of the adjoining articulations and even of the fractured member as soon as the pain has disappeared, and has to be restained rather than encouraged in his desire. The great rapidity of the cure of contused muscles when massaged is well known. In fine, massage favors the perfection as well as the rapidity of repair of all parts.

Practice of Massage.—(1) It may be commenced at once and continued every day, the limb being placed in a removable apparatus or not according to the tendency of the fracture to displacement. (2) After being first massaged the limb may be placed in a plaster splint and massage recommended in a few days, when the splint is removed, to be reapplied and removed daily. This course may be adopted when there is moderate tendency to displacement. (3) When there is great mobility of the fragments, immobilization may be employed, to be followed by massage after the commencement of consolidation. In general, and when it is possible to do so, the earlier the massage is used, and the more systematically it is kept up, the better are the results.

The maneuvers of massage are simple, and consist of a series of movements in the direction of the muscular fibers and blood current, made by the thumb, fingers, or whole hand, making more or less pressure, according as the effect is to be superficial or deep. The thumb, or thumbs, or two fingers, are employed if a deep effect and strong pressure are desired, otherwise the whole hand. First, it is necessary to fix the member to be massaged, and this is done by supporting it on a hard pillow or, better, a sand cushion molded to fit the part; or, later on, by resting it on the knee; or, in the upper extremity, by the weight of the limb. Traction is made by the hand not massaging or by an assistant, in which case both hands may be used to massage, if desired. The best lubricant is olive oil, the next best soapsuds, and perfect cleanliness should be observed. The part should be massaged for from fifteen to thirty minutes once a day, oftener may do more harm than good.

The cardinal rule that the massage should cause no pain is always to be borne in mind. Therefore, at first, very little pressure should be made, and the whole hand should be used, commencing well below and ending far above the fracture, and *omitting all pressure* over the site of the fracture *at all times.* After five or ten minutes, gradually increasing the pressure, a certain degree of anesthesia is produced, and deeper pressure may be made on the muscle groups by using the thumb or two fingers. The energy of the pressure should vary with the age of the fracture and its variety. Other movements, besides the slight ones due to massage, are of themselves painful, hence they should be made, when desired, at the end of massage, when the part is made more or less anesthetic. They may be of two kinds, active and passive. The neighboring joints should be moved by the surgeon and, early in the course of the treatment, the pain having disappeared, the patient may be allowed to make active movements, but these should be limited, as there is more danger of too much than too little, owing to the absence of pain and the general normal feeling of the part. The remoter joints also should not be forgotten in the movements.

In the matter of retentive apparatus between the periods of massage, Championnière is very radical, discarding everything except a flannel bandage, save where there is a tendency to displacement, and even in these cases, as soon as there is a certain degree of consolidation. Of course, in fractures with any *marked* tendency to displacement, retentive apparatus must be employed until this tendency disappears with beginning consolidation.

Contraindications.—Certain conditions, besides extreme mobility of the fragments, contraindicate massage for a time, namely, large or numerous blebs, until they are dried up; also, a sharp fragment threatening to perforate the skin, or open vessels. On the other hand, compound fractures, especially those compounded from within by a sharp fragment, may be massaged at a comparatively early period when the usually small opening has closed.

The practical results of the treatment of fractures by massage may be summed up as consisting of (1) the disappearance of pain (as in the similar treatment of sprains); (2) the disappearance of tension and swelling in the tissues from the absorption of ecchymosis and serous effusion; (3) the sedative nervous effect; (4) the extreme rapidity of the formation and consolidation of callus; (5) the early establishment of function; (6) the absence of atrophy of muscles, stiffness of joints and tendons, secondary swelling and edema, and poor circulation. In short, a very rapid recovery, marked by comparative absence of pain, and an excellent functional result.

It is in fractures at the ends of bones that the results of this treatment are the most strikingly good, and those of immobilization the worst. In such fractures the deformity is less and the vascularity greater, so that, though extravasations are common and extensive, their resorption by the use of massage is very rapid and complete. In Championnière's hospital service the average duration of the treatment of fractures of the fibula is three weeks, and patients with fracture of the radius commence to use the hand in eight days. In other fractures the time of treatment is proportionally shortened, and not only this, but the functional result is most excellent. The foregoing is a brief summary of Championnière's views and practice, which are fully detailed in his book.

Admitting that, in advocating a new plan of treatment, the pendulum only too often swings too far, and that the best and safest plan is to be found somewhere midway, we may ask the question: What have others to say of the use of massage in the treatment of fractures, and what has experience taught us? French and German medical literature contains numerous references to this plan of treatment, indicating its extensive trial abroad. The practice of most German surgeons is not so extreme as that of Championnière.

As both P. Klemm[1] and Bum[2] say, the fractured bone demands rest, but muscle and joints bear it badly, and demand movement. Accordingly, the two last named surgeons limit its application to fractures in or near joints in which, as Klemm says, all agree that long-continued immobilization gives very questionable results. According to Klemm, the extravasation of blood in and about the joint is the essential factor in the loss of function of the joint, which is the serious part of these fractures. Some of this blood is absorbed, but most of it is changed to a connective-tissue thickening of the synovial membrane, causing contracture and adhesions. The extra-articular extravasation also affects the function by making the ligaments and tendons stiff. If this process is once under way the function of the joint is doomed, and it may always be crippled by it. Even the monarticular form of arthritis deformans has been shown by Volkmann to occur after such injuries. The treatment of such fractures must eliminate the extravasated blood, and this indication is fulfilled by massage, which meets another requirement by preventing muscular atrophy.

Movement of the joints is added to prevent stiffness and contracture. It is an essential feature of this method, according to Landerer,[3] that the soft parts receive as much attention as the formation of callus, for atrophy of muscles is marked after twelve days of disuse. Furthermore, Landerer and Bum, in accord with Championnière, point out that early massage, by improving the circulation, favors and hastens callus formation.

The carrying out of the treatment by massage is subject to considerable individual variation among surgeons who have reported their experiences.

As callus formation commences almost immediately, and does not delay until the fourth or fifth day, as was formerly supposed, crepitus until then being due to bony spicules, which are absorbed after about the fifth day, Landerer insists that fractures should be put up at once in the best possible position. Like Klemm and Bum, he does not like massage continuously from the first for fear of the displacement of the fragments and the misformation of callus, especially as no time is thereby gained. He makes one exception to this in impacted fractures which it is impossible to reduce, and he also states rather ambiguously, that joint fractures cannot be treated too soon by massage, passive motion and change of position of the splint. Accordingly, the above-named surgeons treat fractures near joints as follows: After careful reposition of the fragments, if necessary, and with or without being first massaged, the limb is put up in a plaster or other form of splint. After from four to twelve days, varying according to the nature and position of the fracture and the practice of the individual surgeon, the splint is removed, the limb massaged and again applied in the splint, and the massage repeated every day thereafter with passive motion in the neighboring joints. The results of this practice appear to be excellent. For instance, in malleolar fractures, the patients walk with two canes after fourteen days and in three weeks without any support (except, perhaps, in going up stairs). In twenty-eight cases of fracture of both malleoli in Klemm's practice, the average length of treatment was 24.3 days, and in thirteen cases of fracture of one malleolus 18.6 days. According to Lumniczer's[1] table, in fractures treated by massage and movement bony union was obtained in one-third and a functional result in one-half or two-thirds shorter time than when treated by immobilization. Collé's fractures are cured in even shorter time than malleolar, free use of the joint being obtained in fourteen days.

A further argument for the treatment by massage and passive motion of fractures near joints is found in the fact that this treatment is so generally and successfully applied to sprains. We may add that, according to Landerer, ninety-five per cent. of so-called sprains of the ankle are really fractures, and ninety-nine per cent. of sprains of the wrist are fractures of the lower end of the radius.

As above indicated, German surgeons do not consider fractures of the shaft of bones applicable to treatment by massage, on account of the tendency to displacement, until after consolidation by callus or except where there is no tendency to displacement, or where a little over-riding would cause no loss of function, as in fracture of the fibula. Otherwise in fractures of the shaft Burn would immobilize for ten to twenty days, until callus formation is assured. According to Landerer also all oblique fractures must be treated by extension where both bones or the only bone of a limb is broken. Klemm would recommend for fractures of the shaft of the bones of the leg Krause's ambulant treatment, in which, for about eight days, massage is employed daily with elastic compression between times. In eight days the swelling has subsided and the ambulant splint applied. This combines some of the advantages of both methods, but by no means all, and it has seemed to me that these advantages might be well combined in fractures near joints. But in the latter class of fractures Krause's method is faulty, for it exposes the joint to the dangers of stiffness from immobilization after the eighth day. This was strongly impressed upon me by two of my cases in which massage was being applied, and which I put up in plaster after a week or so on account of the marked deformity of the Potts' fracture, being uncertain of the results of the massage method in such cases. Before the plaster was applied the ankle was freely movable and the site of the fracture painless. After two weeks in plaster the ankle was stiff and painful on motion, and the position, though good, was no better, if even as good as in a similar case massaged throughout.

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[1] P. Klemm: "Zur Behandlung der Gelenkbrüche" (Volkmann's Samlung, neue Folge, No. 78).

[2] A. Bum: "Ueber mobilisirende Behandlung von Knochenbrüche," Wiener Klinik, 1895, xxi, 1–20.

[3] A. Landerer: "Die Behandlung der Knochenbrücke" (Volkmann's Samlung, neue Folge, No. 19).

[1] J. Lumniczer: "Beiträge z. Heilverfahren bei Knochenbrüche," *Ung. Archiv. f. Med.* Bd. II. Hft. 2.

A combination of the advantages of the ambulatory and massage treatment can, I think, be obtained, in a measure at least, by the method suggested by Dollinger[1] or modified to the extent that the walking plaster splint is cut down in front instead of on both sides, as he suggests. In either case the splint is held securely in place by three or four broad straps. Of this modified method I made a partial trial in one case, with the result that it seems to me to be feasible. There is one fracture, preëminently a fracture near a joint, in which the poor functional results often obtained are due largely to two causes—the changes in the blood in and about the joint and the atrophy of muscles, both of which are remedial by massage. I refer to fractures of the patella. Burn's remark that every method of treatment of these fractures which results in bony union leads to important loss of function, deserves careful consideration.

The facts justify Klemm's statement that bony union seems to be the primary object of many, the functional result secondary. All will admit it to be true, as Landerer says, that the great need in the treatment of fractures of the patella is a method that every one can apply. Such a method I think we have in one of the various modifications of the application of massage. This does not seek to obtain bony union, but, when the distance between the fragments is not too great, anatomical restitution of the parts is not necessary.

I do not wish to be understood as opposing operation in cases of fracture of the patella. I have frequently operated myself and expect to continue to do so in suitable cases. The treatment by operation should be confined, however, to surgeons who can operate with every facility. It remains true, however, that a large number of such fractures must be treated by others, and the need of a method giving a good functional result is met by the massage method with the additional advantage that the duration of treatment is much shortened. As to the ambulatory treatment, Landerer and Klemm agree that it is just the thing in cases of fracture of the neck of the femur in old people, and that this is about the only fracture near a joint where it is called for. Klemm adds that such injuries are satisfactorily treated in this way by the use of a Thomas' splint in A. von Bergmann's wards in Riga. I would certainly add all fractures of the leg, especially of the shaft of the bones, in old people and alcoholics to the list of those to be treated by the ambulatory method, or, preferably, this method combined with massage.

Treatment by massage is indicated in all fractures in or near any joint as well as those especially referred to. Thus Selenkow[1] reports a case of fracture and dislocation at the elbow in which massage was employed with great success, active motion being begun in fourteen days and the splints removed in seventeen days.

With many of the above facts in mind, my own experience, by no means extensive, commenced rather cautiously somewhat over a year ago. I have for the most part only treated fractures near joints, in which the method seemed to me to meet an urgent need. The fractures so treated have been mostly Potts' fractures, and the treatment has been carried out mainly by the house staff or nurses of the First Surgical Division of Bellevue Hospital. Up to the present time I have treated thirteen Potts' fractures, and three are now under treatment. Of these cases four were treated a year ago, the rest during the present winter. I have also treated, or have under treatment, fractures of the radius (Colles'), elbow, patella, shoulder, and leg. I have, perhaps, been over cautious at first, and have not allowed the patients to get up quite as early as the French and German surgeons, whose results I have reported. Furthermore, I have not hesitated, if the position seemed to be faulty, to suspend massage and put the leg up in plaster to correct displacement. In such cases the difference between the two methods has been made very striking. The ankle joint, comparatively supple when put up in plaster, has been decidedly stiff when the plaster was removed ten or fourteen days later. As stated above, this led me to the idea of combining the advantages of the ambulatory and massage methods advocated by Dollinger. I have only had enough experience with this plan to determine to test it more thoroughly and to venture the opinion that it promises an ideal method of treating periarticular fractures of the leg. The deformity of a Potts' fracture may be corrected by applying between the periods of massage half of a plaster cast applied in the correct position of the limb. Otherwise I have used for the most part a Volkmann's splint to retain the leg between times for the first fourteen days.

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[1] J. Dollinger: "Ein einfacher abnehmbarer Gipsverband zur ambulanten Behandlung der Unterschenkelfrakturen." *Centralbl. für. Chirurgie*, 1893. No. 46, p. 995.

[1] T. A. Selenkow: "Zur Behandlung der Fractura Simplex."—*St. Petersburg Med. Wochenschrift*, 1889, No. 6.

As to the results of the treatment by massage, my experience has been very encouraging, so much so that I have made it the routine treatment in my wards in Bellevue Hospital in fractures near a joint. Pain and swelling subside early, and the patients often express a desire to get up before I allow it. Bony union is obtained by the end of the third week, and when I let the patients get up (from the nineteenth to the twenty-fifth day) they are able to walk without a cane within two or three days with little or no stiffness or pain.

As far as my limited experience justifies me I can conscientiously recommend the method to others, for it is easy of application, though demanding somewhat more time on the part of the surgeon. The time from the receipt of fracture to the commencement of massage has varied from 1 to 8 days, and has averaged 2 days. Massage was applied, as a rule, once daily for fifteen to twenty minutes, followed by passive motion which increases with the time after the fracture. The time from the receipt of fracture to the first time allowed up has varied from 18 to 27 days, and averaged 22.3 days; and to the time when the patient could walk without any support has varied from 21 to 32 days, and averaged 27.5 days. The average stay in hospital has been 31.3 days (*i.e.*, from 18 to 41 days). One patient, a woman who weighed 200 pounds, with a bimalleolar fracture, walked without support, and without pain and stiffness, in 21 days. That the result in each case has not been proportionately good is not surprising considering that massage has been applied by a number of different persons not equally skillful. In fact, the method has not yet been used enough to educate any one of those giving the massage to a high degree of skill in its use. Hence, the method has been tried under disadvantages, and it is not strange that in three cases we have applied plaster splints after varying periods of massage. The results in these three cases, showing almost the same degree of joint stiffness as in cases treated by immobilization, has impressed upon me the importance of applying the massage last,' the plaster first. Partly for this reason, partly because the recent cases of Potts' fracture have had extreme mobility and deformity, and partly to try the plan of massage treatment practised by the German surgeons referred to, I have adopted of late the latter method and put the fractures up in plaster at once for a variable time, and then applied massage and passive motion, keeping the limb between times in a part of the plaster splint. I have done this the more readily because I believe that the treatment of fractures near joints by massage is especially adapted to private practice, where we are held more personally responsible for the functional result, and where the surgeon as well as the patient might hesitate to be without the security of a plaster splint at first to maintain the parts in the best position.

The following conclusions may, I think, be drawn from the consideration of the above:

1. The treatment of fractures, especially those near joints, by immobilization, whether ambulatory or not, leaves something to be desired in (*a*) the time required and (*b*) the functional result obtained.

2. The treatment of such fractures by massage and passive motion shortens the time of bony union by one-third or one-half, and vastly improves the immediate functional result.

3. This treatment is especially applicable and important in fractures near joints.

4. Its application is easy. It relieves pain and swelling, hastens callus formation and solidification, prevents atrophy of the muscles and stiffness of the joints and tendons.

5. Splints should be applied between the daily fifteen or twenty-minute applications of massage for the first ten or twenty days, according to the nature of the fracture and the tendency to displacement, or until consolidation occurs.

6. This treatment, combined with the ambulatory method, promises an ideal method.

7. Oblique fractures of both or the only bone in a limb, or fractures near the middle of the limb with a tendency to displacement, should be immobilized until consolidation has commenced.

8. The ambulatory treatment is indicated in the latter classes of fractures, in fractures of the lower extremity in the alcoholic or very aged, and in fractures of the neck of the femur in the aged.

9. The plan of immobilizing the limb for a short time in the best possible position, and then applying massage and passive motion, promises equally good results, and especially adapts the method to private practice in which it is particularly indicated on account of the shortened time required for union and the excellent functional results.

OPIUM POISONING.

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IN A paper on "Suicides" which I read before the Denver and Arapahoe County Medical Society in February, 1894, I reported twenty-eight cases of poisoning by opium. I have since then treated twenty-seven additional cases, making a total of fifty-five, eight of which proved fatal. One patient died just as I arrived. The other seven lived from one to twelve hours after treatment was commenced, except one man, mentioned in my former paper, who died from inanition after ten days had elapsed. Thirty-nine took morphin, thirteen laudanum, one aqueous extract of opium, and one gum opium. The drug was taken by the mouth in all but two instances. In one of these a young man allowed a woman who was addicted to the use of morphin to give him two hypodermic injections of the drug, each of about one-third of a grain, "just to be sociable," to use her own expression. The other patient smoked opium, and followed it up by taking a large dose of opium internally. The amount taken by the various patients varied from one grain to one dram of morphin, and from half an ounce to three ounces of laudanum. Thirty-five patients were already so far under the influence of the drug when first seen as to necessitate the use of the stomach pump for the evacuation of the stomach. The remainder were seen early enough for emetics to be of service.

The symptoms caused by opium when taken in poisonous doses may be divided into three stages: First, that of increased nervous excitability; second, a condition of somnolence or drowsiness; third, the stage of narcosis. The duration of the first two stages varies greatly in different cases. When a very large dose is taken, the first may be entirely absent, or may last only a few minutes. The patient in this stage acts not unlike a man partially intoxicated. The heart's action is increased, the face is flushed, and the imaginative powers are increased. If the case is one of attempted suicide, the patient often tells, while in this condition, what he has taken. The second stage is of short duration if the dose has been a large one, its length increasing as the dose is diminished. If but little more than the medicinal dose has been taken, this stage lasts for several hours, and is followed by a return to consciousness. The condition at this time very closely resembles sound sleep. The respiration and pulse are normal, or nearly so, and the pupils are contracted. The patient, when aroused, is often annoyed by a violent itching of the skin, sometimes general, but more often confined to the face, especially the nose.

In the third stage, opium poisoning is sometimes differentiated with great difficulty from uremic coma, alcoholic narcosis, cerebral hemorrhage, and the condition following an epileptic convulsion. In uremic coma the pupils are usually normal or dilated, but may be contracted; convulsions generally occur, and anasarca is usually present. The urine is always loaded with albumin, and the temperature is said to be always below normal. In alcoholic narcosis the pupils are normal or dilated, the respirations are not as slow as in opium poisoning, and the pulse is slow and full. Too much dependence must not be placed upon the odor of alcohol, as the patient may have taken opium while intoxicated. A hypodermic injection of apomorphin will cause a man unconscious from alcohol to vomit, but will have no effect if the case be one of opium poisoning. In case of cerebral hemorrhage there is usually more or less paralysis of the cranial nerves, with some differences in the reflexes of the two sides of the body, and in the size of the two pupils. In the coma following an epileptic convulsion, the tongue will probably be bitten, the pupils dilated, and the respirations but little slower than normal. The history and surroundings are often more valuable aids to diagnosis than the physical condition. The occurrence of a convulsion at the beginning of the attack will exclude opium poisoning, although it may occur in any one of the other conditions named.

The prognosis in the first and second stages is usually good. In the third stage it is uncertain. Drunkards recover poorly, and the prognosis should be guarded when a drunken man takes opium, even when there is only slight absorption before the case is seen.

There are two objects to be attained in treatment. First, to remove or render harmless the opium still remaining in the stomach; and second, to support the vital functions until the poison has been eliminated from the system, or, if possible, destroy it in the blood without waiting for the slow process of elimination.

The first of these indications can be met by emetics, the stomach pump, or by permanganate of potash. Of the emetics, apomorphin is probably the best, because the quickest. One-tenth of a grain should be given hypodermically if the case is in the first or second stage. It should never be given in the third stage, as it will not produce emesis after unconsciousness has supervened, and may cause dangerous heart-depression. In fact, I am inclined to believe that it has helped to cause a fatal result in some of my cases in this way. It will, however, act at a later stage of opium narcosis than any other emetic with which I am acquainted, so if an emetic is to be given at all I prefer the apomorphin. It is better to risk its bad effect on the heart than to fail entirely in producing emesis, unless a stomach pump is at hand. When a pump is available it should be used instead of an emetic if a patient is nearing the third stage, or, in other words, when he can only be aroused with difficulty.

Although the apomorphin produces no effort at vomiting when administered to an entirely unconscious patient it seems to depress the heart even more than when given to a partially conscious person. When the pump is used, the stomach should be filled with warm water and repeatedly emptied until the water is returned clear. The stomach should then be filled with hot, strong coffee. When apomorphin is to be given, the patient should be induced to drink as much water as possible while the hypodermic syringe is being prepared. If this is postponed until after the injection is given, nausea sometimes comes on so quickly that it is hard to induce the patient to drink a sufficient quantity to liquefy the contents of the stomach.

After the unabsorbed opium has been removed by the emetic or stomach pump, the respiration and circulation should be kept up by stimulants, of which there is a considerable number in use. I place the greatest reliance in strychnin, giving it in the form of the sulphate in doses of $\frac{1}{25}$ of a grain hypodermically as often as the respiration or pulse becomes weak. Atropin I consider useless, and I no longer use it except when it becomes necessary to do so to avoid censure from other physicians. Digitalis is of undoubted value when the pulse is weak. Aromatic spirits of ammonia acts nicely, especially when there is sudden failure of the heart's action. The inflammation which often follows its injection makes its use objectionable. I am undecided as to the merits of nitroglycerin. I do not favor the external use of cold water for the purpose of keeping the patient awake, as it is too depressing. Beating or abusing a person for this purpose is also unjustifiable. The faradic current applied to the face and neck is much more efficient and leaves no bad effects. In many cases of opium poisoning, death has undoubtedly been due to the shock and exhaustion caused by the long-continued beating and forced walking to which the patient has been subjected by the well-meaning but misguided attendants.

The beneficial effects of the faradic current is no doubt due principally to the fact that it causes pain, or at least an unpleasant sensation, and thereby keeps the patient aroused. The current should therefore be strong enough to be decidedly unpleasant, and metal electrodes should be used. If a faradic battery is not obtainable, the next best thing is to keep the patient aroused by talking to him, pulling his nose, slapping him lightly, and similar procedures. Under no circumstances should he be dragged around the room between two men or severely beaten. Cases which recover under that style of treatment recover in spite of it, and not on account of it. The galvanic current, when available, is of undoubted benefit in stimulating respiration.

I have tried dilatation of the anal sphincter. It is of no more benefit than any other procedure which causes an equal amount of pain, and I think it unjustifiable. I hold the same opinion in regard to the rectal injection of irritating substances such as tincture of capsicum.

In the New York *Medical Record* of February 17, 1894, Dr. Moor published an article advocating the use of permanganate of potash as an antidote to morphin. He had taken as much as two grains of sulphate of morphin, followed by the same amount of permanganate, without feeling any effects from the dose. The remedy became famous in a day, although at that time it had not been tried except in the experimental way mentioned. Since then a considerable number of cases have been treated with this agent and reported, and a great deal of discussion has taken place in regard to its action. In all the cases I have been able to find reported, the usual remedies have also been used, and the result of the entire treatment has been about what I would expect without the use of the permanganate.

In another article by Dr. Moor on the subject, published in the MEDICAL NEWS of May 4, 1895, he makes the following bold statement: "I say that any physician on arriving at the side of a person suffering from opium poisoning, who does not at once administer to that person a sufficient quantity of the permanganate, commits an act of gross negligence." He then goes on to state three different indications for the use of the drug. The first is to neutralize any opium which may remain in the stomach. This is effected by giving a sufficient quantity of the permanganate internally, well diluted. He allows one grain for each grain of morphin which has been taken. If the patient is sufficiently conscious to swallow, and the permanganate is certain to render the opium harmless, and I believe it is, this treatment does away with the danger of heart depression, which I have already mentioned as sometimes following the use of apomorphin.

The second indication, as given by Dr. Moor, is to destroy the morphin contained in the circulating blood through hypodermic injections of the antidote. That sounds very nice in theory, but I have put it into practice with disastrous results. I was called to see a man who had taken a large dose of morphin. The quantity could not be ascertained, neither could the time at which it had been taken, but he could not be aroused in the slightest degree. The respirations were four to the minute, and the pulse was weak and rapid. His stomach was emptied and thoroughly washed out, and then filled with hot coffee, and my usual treatment was carried out. At the end of two hours he was sufficiently recovered to fight vigorously when the faradic current was applied to his face. He spoke and nodded his head in answer to questions several times, and vomited the coffee which had distended his stomach. This case occurred soon after the permanganate treatment was first announced, and I had not as yet had an opportunity to try it. I had provided myself with a two-per-cent. solution, and, as the case now seemed in a fair way to recover, I decided to hasten the recovery by "destroying the morphin which was still in the circulating blood," to use Dr. Moor's expression. At intervals of about five minutes I gave hypodermic injections of the two-per-cent. solution, giving ten minims at each injection, until I had given 100 minims, which would equal two grains of the drug. The patient had by this time relapsed into insensibility, the pulse was very weak and rapid, and the respiration shallow. Happening to notice that the skin was very warm, I took the temperature, and was surprised to find it 102½° F. in the axilla. It went up steadily to 103°, 104°, 105°, and 106° F., reaching the latter point before death, which occurred about five hours later. The treatment after the permanganate was used consisted of hypodermic injections of strychnin and digitalin. No autopsy was held.

In another case where a woman had taken two ounces of laudanum, I repeated the experiment with a smaller amount, giving sixty minims of a two-per-cent. solution hypodermically after evacuating the stomach by the use of apomorphin. The woman was sleepy, but was at no time unconscious, and I did not consider her condition serious, as I had been called a few minutes after the dose was taken. Ten minutes after the permanganate was injected the temperature was 100½° F., in thirty minutes it was 101°, in forty minutes 100¾°, and it then went down, being normal eight hours later. On the following day there was again some temperature, due no doubt to the inflammation which had occurred at the site of each of the three injections. In two other cases in which I used the drug hypodermically I failed to take the temperature. Both patients were seen before the second stage was fairly ushered in, and both recovered, as I have no doubt they would have done without the permanganate, and so far as I could judge, the course of the cases was not modified by its use. In every case, except the fatal one, there was considerable local inflammation following its injection.

The third of Dr. Moor's indications is to decompose the alkaloid that returns from the circulation to the stomach. To accomplish this, he advises giving from time to time a tumblerful of a weak solution internally. When a permanganate solution is allowed to remain in the stomach a few minutes and is then withdrawn, it has lost its characteristic color and also its deoxydizing power, just as it does when a few drops of acetic acid are added to the solution. After the stomach is repeatedly washed with a solution of two grains to the pint, the fluid returns unchanged. The conclusion I draw from this is, that to have the permanganate retained in an active condition it is necessary to wash the stomach out with it often enough to temporarily stop the acid secretions from the mucous membrane of the stomach. When this is accomplished, the elimination of morphin from the blood by the stomach is necessarily also stopped. Therefore, if given in large quantities, it stops one important channel by which the poison is eliminated from the blood, and is useless if given in small quantities.

My position in the use of permanganate, stated briefly, is as follows: Taken internally, it renders harmless opium which still remains in the stomach. It is useless or injurious when given hypodermically. It is useless or injurious when given internally for the purpose of decomposing the opium which may return to the stomach through the circulation.

Bellevue Hospital Medical College.—The officers of Bellevue have secured a plot of ground on the corner of First avenue and Twenty-sixth street, 100x150 feet, adjoining the Carnegie Laboratory. Upon this site they propose to erect a modern and substantial structure. The work will begin immediately, and the building will be ready for occupancy on September 1st.

THE PHYSIOLOGICAL ACTION AND THERAPEUTIC USES OF YEAST NUCLEINIC ACID, WITH SPECIAL REFERENCE TO ITS EMPLOYMENT IN TUBERCULOSIS.

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(Continued from page 332.)

CASE XXIX.—J. B., of LaPorte, Ind., came to me in October, 1894. There was no family history of tuberculosis, or known source of contagion. This patient, aged twenty, is under size and weight, his greatest weight having been 118; weight at time of beginning treatment 113. He began to have continued sore throat and hacking cough three years ago, but had been coughing up phlegm only during last two months. There were crepitant râles over apex and subclavicular area on right side. There was a small cavity between second and third rib on right side. The right lung showed general dulness on percussion. The left lung showed no abnormality. The amount of sputum was not more than two ounces in twenty-four hours, but it was rich in tubercle bacilli. There were no night sweats, and the afternoon temperature seldom exceeded 100° F. This patient improved rapidly. By January 1, 1895, the cough had ceased, the temperature was constantly normal, and the weight had reached a few pounds above the maximum. From this time to first of March, 1895, injections were made two or three times weekly. In March, 1895, the only evidence of disease in the lung was some dulness and prolongation of expiratory sound on the right side. However, an interesting bit of the history of this case follows: As has been stated, the cough ceased by January 1, 1895. In August of the same year, the young man coughed up a few mouthfuls of sputum and sent this to me. It contained a few tubercle bacilli. The cough did not continue. From October 1, 1895, to January, 1896, this patient had from two to three injections per week. By June the cough had stopped, and he felt so well that he discontinued the treatment. From June, 1896, to August 1, of same year, this patient had from two to three injections per week, as a precautionary measure. Since August 1, he has had no treatment. He now (October, 1896,) weighs eight pounds more than ever before and has no cough. Examined his lungs carefully October 22, 1896. A very slight prolongation of the expiratory sound over the right apex is the only evidence of abnormality.

This case is of especial interest inasmuch as it demonstrates that apparent cures do not always mean the complete destruction of the bacilli in the body.

CASE XXX.—C. F., of Ypsilanti, Mich., a boy of seventeen, had numerous small cavities in both upper lobes when I first saw him in November, 1894. The treatment was given until February 1, 1895, when the patient was sent to Colorado. The first month of treatment seemed beneficial, but after that the disease progressed. In Colorado he had influenza and came home after four months and soon died.

CASE XXXI.—Miss A., aged twenty-six, of Saginaw, Mich., had bronchial breathing over both upper lobes. Consumption had been diagnosed two years before, and she had spent the preceding winter in the Adirondacks. She had treatment, beginning in November, 1894, and continued for six months. She gained in weight, and coughed and raised less. The bacilli continued in the sputum and the physical signs showed but little change. I have not seen her since she discontinued the treatment.

CASE XXXII.—Mrs. D., a colored woman, aged forty-two, living in great poverty, came under treatment in November, 1894. It was difficult to get any satisfactory family history. "Father died of chronic inflammation of the lungs, and one brother who was sick for a long while, died of pneumonia." She had been with both her father and brother in their last illness. Her bad cold had begun about one year before. During this time she had lost in weight, from 140 to 119 pounds. She coughed and raised profusely, and the sputum was rich in bacilli and in elastic tissue. There was a cavity in the right upper lobe and bronchial breathing on both sides. Treatment was continued as long as the patient was able to come to the office, which was about two months. The disease rapidly progressed and there was no evidence of any beneficial effect of the nuclein. Death occurred a few months later.

CASE XXXIII.—J. H., of Yale, Mich., aged thirty-four. His mother died of consumption at the age of fifty-six, three years ago. He was her principal attendant during her last illness. In January, 1894, he began to cough, and could not speak above a whisper. He had been coughing ever since, and had lost thirty pounds in weight, when I first saw him, which was in December, 1894. He had a large cavity in the right lung, bronchial breathing over the left lung, and tubercular laryngitis. He remained under treatment for three months. During the first six weeks he improved in flesh, gaining nearly fourteen pounds in weight. His throat was treated with a spray consisting of equal volumes of the one-per-cent. solution of nucleinic acid and a saturated solution of boric acid. The condition of the larynx was much improved and the voice regained. However, during the latter half of his stay here, the condition of his lungs grew worse, and after going home he rapidly failed. The improvement was only temporary and, as stated above, the disease progressed while the treatment was being continued.

CASE XXXIV.—Miss B., aged seventeen, came to me December 4, 1894. She had tuberculosis of the right elbow-joint, which had been inflamed and painful for three years. This had been called rheumatism. The joint was discharging at the time of the first examination, and tubercle bacilli were found in this discharge. There was prolonged expiration over both apices, but no cough and no expectoration. There was a purulent discharge from the umbilicus. The afternoon temperature ranged from 100° to 101° F. The one-per-cent. solution of nucleinic acid was injected into the tissue about the joint and the sore was dressed with iodoform gauze. The nuclein was also injected for a few weeks about the umbilicus. The patient at that time remained under treatment until the first of July, 1895. Within six weeks after beginning the treatment, the temperature became normal, and has so remained, with one exception to be mentioned. By the first of June, 1895, the joint had so far improved that the young woman could use the hand in playing on the piano, could feed herself with the right hand and could use the arm in dancing. The discharge had ceased, the wound healed, and further treatment was considered unnecessary. This favorable condition continued until February, 1896, when the joint received two bad blows. Once it was struck with considerable force on the tire of a carriage wheel, and the second time the patient fell on the ice striking on that elbow. March 24, 1896, she returned with a swollen joint and a temperature of 100° F. Dr. Nancrede made an incision, and with a curette removed some tubercular matter. The arm has been carried in an aluminum splint since that time, and the wound washed out daily with the one-per-cent. solution of nucleinic acid. The five-per-cent. solution has been administered by the mouth in teaspoonful doses three times a day. Her general health remains good, and there is no abnormality detectable in the lungs.

[March, 1897. The wound has healed and the general health of the patient is excellent.]

I may call attention in this connection to the favorable reports made by Hitchcock[1] on nuclein in a case of hip-joint disease.

CASE XXXV.—S. M., aged twenty-seven, of Bedford, Mich., was sent to me February 22, 1895, by Dr. G. W. Lowry of Hastings. His wife died of consumption August 8, 1894, after an illness of one year. The husband took care of her during this sickness. About three weeks before her death he began to have a sensation of great weariness and some elevation of temperature. At the time of the first examination, the only physical evidence of the disease was a marked retraction of the left apex and a prolongation of the expiratory sound over this region and the subjacent area. He coughed very rarely in the morning and then raised some sputum, in which a few bacilli were found. The loss in weight had been about ten pounds. The afternoon temperature ranged from 99° to 100° F. After four weeks of treatment the normal weight was regained, the cough ceased entirely and the patient has remained apparently in perfect health since.

CASE XXXVI.—E. A. R., a farmer, aged fifty-four, from Covert, Mich., came to me in November, 1894. His mother died of consumption many years ago. He was not with her in this illness. His mother's sister also died of consumption. One of his own sisters had been an invalid for fifteen years from a fall, and coughed much before her death. Another sister had died some seven years before of quick consumption. He had occasionally visited these sisters during their illness. Five years ago he had a hemorrhage, "followed by pneumonia." In 1890 he had a severe hemorrhage. From the time of the first hemorrhage, in 1889, he had not been well and had steadily lost flesh. In 1893 he had another hemorrhage, and still another about one month before he came to me. He was coughing and raising freely. The sputum contained numerous bacilli and some elastic tissue. His greatest weight had been 175, and at the time of the examination it was 152 pounds. There were numerous small cavities in the upper lobes. This patient remained with me only four weeks, but continued the treatment with Dr. Carnes, of South Haven. Dr. Carnes wrote me under date of March 1, 1895, as follows: "Mr. R. has been under the nuclein treatment now for three months, in addition to the one month spent with you. He now weighs four-and-a-half pounds more than he did at Christmas. His temperature is practically normal all the time, seldom reaching 99° F. However, he coughs much, a clear, ringing cough, without much expectoration. He never before had a three-months' rest, and this has probably contributed to his gain."

A second report from Dr. Carnes under date of November 22, 1895, states: "He coughs much, and says that he cannot endure hard work, but it is plain to see that he is in better flesh and far more vigorous than he was last spring. He has for several years vacillated in this way, so I can see but little difference between the last year and several preceding years."

Recently (October 24, 1896,) Dr. Carnes wrote that this patient, who has had no nuclein now for more than a year, is gradually, but slowly failing in health.

CASE XXXVII.—Miss K., aged thirty-one, of Marinette, Wis., came to me for treatment in January, 1895. There was no known tuberculosis in the family, nor was there any discoverable direct exposure to the contagion. The patient had always been rather frail, her greatest weight having been 120 pounds. However, she had never been ill, until three years before, when she developed a "chronic bronchitis," accompanied by constant cough and profuse expectoration. Sixteen months before coming to me she had gone to Oregon, where she spent a winter, during which she gained thirteen pounds in weight and felt much improved, but even before her return home she began to fail again. Her appetite was very poor and her tongue heavily coated. The sputum contained numerous bacilli and much elastic tissue. There was bronchial breathing over the whole area of both upper lobes. There were numerous small cavities in the same region. The patient remained under my treatment until June, 1895, when she returned to her home, and the nuclein treatment was continued by Dr. Hicks of Menominee, Mich. The result of the treatment was the same in this case as it has been in all others of the same class. There was temporary improvement, with increase in weight, reaching and even passing the previous maximum, and then retrogression, notwithstanding the continued employment of the nuclein.

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[1] *American Lancet*, January, 1895.

CASE XXXVIII.—Mrs. Q., aged thirty-two, of Gaylord, Mich., was brought to me in January, 1895. I say that she was "brought" to the office, and this is literally true. She was in the last stages of consumption, and after an examination, in which I found numerous cavities in both lungs, I advised her husband to take her home as soon as possible. However, he thought that an immediate return would discourage her so greatly that he insisted on a trial of the remedy for nothing more than its mental effect. This case illustrates what hope and nuclein, probably as much should be attributed to the former as to the latter, may do in the way of temporary improvement. This lady insisted on having full doses every day, and they were given. When I state that she gained twenty-five pounds in five weeks I expect to tax the confidence of the reader in my statements to the utmost; but such was the case. Her afternoon temperature fell from an average of 102° F. to less than 100°, and while she had to be brought in her husband's arms from the carriage into the office when she first came, before she left the city she walked many blocks at a time without feeling great fatigue. At the end of five weeks she insisted that she was practically well, and desired to go home. Believing that the arrest of the progress of the disease was only temporary, I made no objection. She returned home, soon lost what she had gained, and died in September, 1895. I desire it distinctly understood that I do not attribute this great temporary improvement wholly to nuclein. It was one of those phenomenal cases of temporary improvement in which the bacillus seems for a time to have lost its virulence, and the vitality of the patient seems to spring into increased vigor at a bound. The nuclein was not used after she left, but I know that even had its employment been continued the relapse would have come with equal certainty.

CASE XXXIX.—M. G., a student, aged twenty-four, came to me in February, 1895, on account of a slight pulmonary hemorrhage which he had at that time. He was coughing up blood. This was examined and found to contain tubercle bacilli. Treatment was begun immediately and continued for two months. On the first examination moist râles were heard over the apex and subclavicular area of the left lung. The afternoon temperature frequently reached 101° F. for two weeks. After this it gradually fell to the normal. The young man continued his studies until June, 1895, when a physical examination failed to reveal any abnormality. He spent the winter of '95 and '96 in Colorado as a precautionary measure, and there has been no evidence of any disease since the treatment was discontinued.

CASE XL.—W. S., a stone cutter from Bluffton, O., came in February, 1895. This case is almost a duplicate of the one just described and several others of a similar character will be mentioned later. A brother-in-law of this man had died of consumption in his house, after a long illness, some months before. S. had a hemorrhage and came to me still raising sputum containing some blood. Bacilli were found but were not abundant. There were râles in the apex and subjacent area of the left lung. There was the characteristic fever curve. After four weeks of treatment the lung cleared up and the man has continued in apparently the most robust health.

CASE XLI.—Miss C., of Allen, Mich., came under treatment in March, 1895. There is no need of detail in this case. The disease was in an advanced stage with cavities and an afternoon temperature often as high as 103° F. There was temporary improvement indicated by a fall in the temperature and a gain in weight. This was followed by retrogression and a gradual decline.

After her return home Miss C. was under the charge of Dr. Williams of Jonesville, Mich., who has kindly furnished the following:

"After her return home from Ann Arbor, some time in the early summer of 1895, I continued the nuclein treatment, at first by internal administration, with negative results, as demonstrated by rise of temperature from 99⅘° to 103° F. Pulse 130. Respiration 22 to 24. Increase of cough, profuse expectoration, and return of night sweats. I then sent for a large syringe and treated her hypodermically, with the result that temperature, pulse, and respirations, were reduced. Appetite in a measure returned. Cough and expectoration modified, and a seeming arrest of the progress of the disease. This condition continued for about four months, or until late fall. During this time I gave her daily treatments at first, then as better symptoms returned, she came for treatment every other day. I injected from 30 to 80 drops of a one per cent. solution, and without the slightest symptom of an abscess at any time.

"From the first of November, until her death—some three months—the history of her case is that of tuberculosis in the last stage of the dread disease.

"While 'nuclein' hypodermically did not entirely arrest the progress of the disease I am satisfied it prolonged her life several months."

CASE XLII.—Miss O., aged twenty-six, a student, came under observation in March, 1895. Her mother and a sister and a brother of her mother and a brother of her father died of consumption. The mother died five years ago, after a long illness, during which the daughter attended her. This patient has always been frail and anemic. Four years ago her physician told her that one lung was diseased, and three years ago she had a long-continued low fever, which was called typhomalarial. She has coughed for four years. The quantity of sputum raised was small, but I never saw another specimen so rich in bacilli as was this. There was a large cavity on the right side, and râles were heard over the whole of the upper lobe on this side, and from the apex to the base in the left lung. The weight at the time of beginning the treatment was 98 pounds. The patient remained under my treatment until October 7, 1895, having an injection of nuclein nearly every day during this time. In October I could not see that her condition was materially different from what it was in the preceding March. Her weight was 100 pounds, and the physical signs remained practically unchanged. I advised her to go to Colorado, and she did so in October, 1895, and placed herself under the care of Dr. Henry Sewall, of Denver. In February, 1896, Dr. Sewall sent me the following condensed record: "Miss O., aged twenty-seven, with poor development and very anemic. Some percussion dulness and fine râles throughout upper half of right lung, and similar sounds found through the left lung nearly to its base; rather dry, cavernous sounds under right clavicle; pallor of pharynx and larynx, and slight swelling of mucous membrane over and between arytenoids. She has received nuclein injections every second day, or oftener, for two-and-one-half months, and has gained four pounds. Her lungs are drier and the morbid signs are less extensive."

In September, 1896, Dr. Sewall reported the continued improvement of this patient.

Case XLIII.—Miss G., aged twenty-five, of Brighton, Mich., came under my care in March, 1895. Her father died of consumption in 1891, and this young woman, always frail, was a constant attendant in his last illness. The mother is living and well. The patient has one sister, who has been married and away from her father's home for several years. This sister is in good health. A brother, who also was with the father during his sickness, has recently been declining in weight and failing in health. As stated above, the patient had always been frail. Her maximum weight was 108 pounds, and she has always been anemic. In 1893, while at the fair in Chicago, she caught cold, and has been coughing and expectorating ever since. The greater part of the winter of 1894 and 1895 had been spent in the South, but the disease had apparently made rapid progress during this time. At the time of her coming to me she was having "chilly sensations, followed by flushed cheeks, every day." There were small cavities in the right upper lobe, and bronchial breathing over the upper half of the left lung. She continued with me until October, 1895; and her history differs materially and favorably from the others of the same class. Up to the middle of August there seemed to be no improvement, and the afternoon temperature frequently went up to 103° F. At the time mentioned, the maximum daily temperature began to fall, the appetite improved and the weight increased. The physical signs showed marked improvement. During the latter half of September the temperature seldom exceeded 99° F. I thought this a good time to send the patient to Colorado. She went in October, aud has slowly improved without further medication.

Case XLIV.—Mrs. E., aged thirty-one, of Ann Arbor, came to me in April, 1895. One sister had consumption for some years, but died in labor. This sister lived with Mrs. E., and as no precautionary measures were taken, the chance of transmission of the contagion was great. A brother, also, developed the disease, and his case will be mentioned later. For nearly a year Mrs. E. had been losing flesh and complaining of great lassitude. A pulmonary hemorrhage sent her to me. For five or six days she coughed up blood, and this was repeatedly examined. Tubercle bacilli were present, but were not numerous. The source of the hemorrhage was evidently in the left apex. Over the whole of the upper left lobe there was dulness, and moist râles could be heard. The afternoon maximum temperature was for some days as high as 102° F. Treatment was begun immediately, and continued daily until October, 1895. From this time to March, 1896, the injections were made twice a week. Since March the patient has had no treatment. She weighs now 25 pounds more than her maximum weight before April, 1895. I can now (October, 1896) find no trouble in the lungs.

Case XLV.—Mrs. S., aged twenty-six, of Chester, Mich., came under my observation in April, 1895. There was a history of direct contagion. She had helped to care for a consumptive neighbor and no precautions against infection had been taken. The patient was in an advanced stage of the disease. There were numerous small cavities on the left side and consolidation on the right in the upper lobes. The maximum temperature was from 102° to 103° F. The treatment was administered for three weeks without any appreciable effect on the rapid progress of the disease. Death occurred within a few weeks after the patient's return home. In this case there was not even a temporary improvement.

Case XLVI.—V. F., aged twenty-four, a medical student, had a hemorrhage in April, 1895. Tubercle bacilli were abundantly present in the blood. There was the pneumonic infiltration and the characteristic fever of tuberculosis. Treatment was given daily to October, 1895, then omitted to February 25, 1896, then three time per week until June, 1896. The summer of 1896 was spent in the Adirondacks without treatment. During this time the disease progressed. When he left Ann Arbor in June, 1896, he had no cough. On his return he was raising some sputum every morning and this contained bacilli. October, 1896, he has returned to college and I find bronchial breathing over the right apex. He now weighs 145 pounds, more than he ever weighed before, but, as stated above the sputum contains bacilli.

Case XLVII.—G., aged twenty-one, of Ann Arbor, is the first of a class which has furnished me with only a few representatives. There was no hemorrhage, but the patient was brought to me on account of a "bad cold" and a cough which had persisted for "some days." The maximum daily temperature was between 101° and 102° F. going occasionally, but exceptionally, to 103° F. There was bronchial breathing with moist râles over the upper half of the left lung. The sputum contained numerous tubercle bacilli. Treatment was continued until October, 1895. The bacilli disappeared in August, and the cough ceased a little later. The temperature became constantly normal about the time the bacilli disappeared. The râles and the dulness disappeared, and the only suspicious sound heard on auscultation was due to some prolongation of the expiratory act. Late in the fall of 1895 this patient went to Colorado as a pracautionary measure. He remains there and reports himself well. I believe that in this case the tubercular invasion had not extended very far when the treatment was begun.

CASE XLVIII.—Mrs. D., aged thirty, of Ann Arbor, belongs to the same class as the preceding one. She had a cough in February, 1895, when I examined her lungs, and believed from the evidence thus obtained that she had tuberculosis, but repeated examinations of the sputum which she was then raising quite freely failed to reveal any tubercle bacilli and the nuclein was not used. After continuing for two weeks the cough ceased. In April another bad cold with cough and expectoration brought her to me again. This time the bacilli were found. Treatment was given for three months and then wholly discontinued. The cough ceased in a few weeks as it had done before, and she passed through the winter of 1895 and 1896 without a "bad cold." She was pregnant at the time of treatment and has borne a healthy child since. Now, there is no evidence of the existence of tuberculosis.

CASE XLIX.—K., a medical student, aged twenty-five, spent the summer of 1894 partly in taking care of several tuberculous patients. In May, 1895, he had a hemorrhage. In the bloody sputum the tubercle bacillus was easily found. The nuclein treatment was begun immediately and continued for two months. He then went to Colorado and located at Fort Collins where he practices medicine. He reports himself as being quite well.

CASE L.—Mrs. L., of Jackson, Mich., aged thirty-two, came to me in June, 1895. She had three children, all of whom were well. The father was then living and well. Her mother died at the age of forty-one of consumption. Four of her mother's and one of her own sisters died of consumption. She had been with this sister during her illness. The patient began to recognize the fact that she was not well early in the fall of 1894. She began to cough and raise about January 1, 1895. At the time of the first examination she was coughing and raising very profusely. She had exhausting night sweats. The average afternoon temperature for four days before the first injection of nuclein was 102° F. There was bronchial breathing over both upper lobes. The appetite was poor. This patient improved temporarily, then lost what she had gained. The treatment was continued about three months, and the condition at the close of this period showed no improvement. She died in August, 1896.

CASE LI.—Mrs. W., aged thirty-eight, of Lima, O., was first seen early in June, 1895. She had been married fifteen years, and had two healthy children. Her father had died at the age of seventy-six and her mother was then living at the age of eighty. She had seven sisters, one of whom had died about two years before of consumption. She had been with this sister during her illness. She had her first hemorrhage in May, 1894, and had coughed and raised some ever since. Strange to say that during this year she had gained in flesh. She was in good flesh (I find that I failed to record her weight), and did not by any means present the appearance ordinarily supposed to be characteristic of consumption. There was bronchial breathing over the whole of the left upper lobe and over the greater part of the right upper lobe. The amount of sputum raised was small, but it contained the bacilli in great numbers. Her appetite was good, and she retained her healthy appearance as long as she was with me, which was until the middle of October, 1895. This patient did not do well. Hemorrhage followed hemorrhage. The quantity of blood raised at a time was small, but it was continuous. I cannot say that there was even temporary improvement. The temperature seldom went as high as 100° F. In October, 1895, she went to Denver, where she continues to reside. The hemorrhages still occur.

CASE LII.—Miss R., aged twenty-eight, was sent to me by Dr. Steiner of Lima, O., in June, 1895. Father and mother were living and well. One brother died of consumption six years ago. The patient was with this brother during his illness. She had been teaching for eleven years in the public schools of Lima. She had influenza four years ago, and has been more or less hoarse, with some cough, since that time, but she has attributed this condition to the unwholesome air of the schoolroom and to the constant use of her voice. During the vacation of 1894 she worked in the slums of Chicago, although at that time she was feeling much out of health. She first consulted a physician in May, 1895, when she went to Dr. Steiner, who immediately recognized the true nature of her trouble. Respiration over both upper lobes was wholly bronchial. The sputum was purulent and contained numerous bacilli. The maximum temperature averaged 100° F. She rapidly improved temporarily until the middle of August, when she had a chill every other day for a week, her tongue was heavily coated, and she loathed food. A mercurial, followed by large doses of quinin, seemed to remove this trouble, which I regarded as an intercurrent attack of malaria. She soon began to improve, and I consented to her returning to Lima and resuming her work as a teacher. Some three weeks later she suddenly developed a pleuritic effusion on the left side. Some of the fluid was drawn by Dr. Goebel and sent to me. It contained tubercle bacilli. Notwithstanding the most intelligent treatment by Dr. Goebel, the patient rapidly failed, and died in February, 1896.

(To be continued.)

CLINICAL MEMORANDA.

THE VALUE OF "COGWHEEL" INSPIRATION AS AN EARLY SIGN OF PULMONARY TUBERCULOSIS. TWO ILLUSTRATIVE CASES.

By J. P. ARNOLD, M.D.,
OF PHILADELPHIA;
PHYSICIAN TO THE PRESBYTERIAN HOSPITAL DISPENSARY.

IN the physical examination of a number of chests, I have been much impressed with the value of "cogwheel" or interrupted inspiration as a sign of beginning tuberculosis of the lungs. I have found this sign present in cases when there were no changes in the percussion note, or in the vocal resonance, and when there was neither cough or expectoration, yet the patients have subsequently developed very definite physical signs, and showed the presence of tubercle bacilli in the sputum. The importance of an early diagnosis in pulmonary tuberculosis cannot be overestimated, as it is only in the early stages that we can hope to cure the disease. The earlier the diagnosis is made, the better the chance for effective treatment.

It is true that this peculiar form of inspiration may be caused by other conditions than that of beginning tuberculosis; nevertheless, its occurrence immediately below the clavicle, especially on the *left* side, should always arouse our suspicion; and whenever there is an hereditary tendency present, the history of exposure to infection, or any progressive failure of health and strength without other assignable cause, it may be considered a very distinctive sign, and treatment should be instituted at once.

The subjoined cases, occurring within the past year, have brought this more forcibly than ever to my notice. In the first case, the cogwheel inspiration was present with other conditions, which made the diagnosis more certain. Both of the cases occurred in apparently healthy young women applying for admission to the training school of one of our hospitals.

Case I.—R. E., aged twenty-five, weight 116 pounds, height five feet eight inches. A brother had died of phthisis. She had always been quite healthy. The chest was long and flat. The vocal fremitus over the left apex immediately below the clavicle approached that of the right side in intensity (a suspicious sign in itself). Just below the middle of the left clavicle there was very marked interrupted jerky inspiration. Expiration was apparently normal. The percussion note over the apices, while not of the best quality, was not sufficiently impaired to indicate distinct disease. There were no other physical signs present. In spite of advice, this young woman neglected to take proper care of herself, and in the course of three months there were undoubted physical signs of consolidation at the left apex. There was cough, expectoration of nummular sputum, night-sweats, and loss of flesh. There had also been a small pulmonary hemorrhage. Because of the perversity of the patient, I was unable to obtain a specimen of the sputum for microscopic examination.

Case II.—E. M., aged twenty-two, weight 133 pounds, height five feet seven and a half inches. Both parents, two brothers and two sisters living and healthy. No history of lung trouble in the family on either side. The patient was a well-built, healthy-looking girl. The physical examination made at the time of admission was entirely negative, except that a few piping râles were heard over the left apex. The statement that she had recently taken cold, and that she had once had a slight attack of asthma, with the further statement that she had only had a cough for two or three days, with no expectoration, was considered sufficient to explain this sign. Probably the limitation of the râles to the upper lobe should have excited my suspicion, but the character of the râles, the fact that they shifted in position, and the entire absence of other signs, led me to consider the condition trivial.

In the course of about six weeks the young woman was sent to me again, complaining of a cough, substernal pain, and expectoration. There was no loss of weight, and the general health was very good. Temperature taken for several days was always normal. The cough was worse in the morning. The examination of the chest was negative, with the exception of well marked "cogwheel" inspiration below the left clavicle. Several examinations of the sputum showed numerous characteristic tubercle bacilli. I had her under observation for about four weeks after this examination. The physical signs remained the same, and the presence of the bacilli continued in the sputum.

The two cases cited above, I think, illustrate clearly the value of the sign mentioned. The occurrence of the piping râles in Case II., even before the interrupted inspiration, is, I think, unusual. Should it be present in another patient, I would watch the case carefully for the occurrence of other physical signs.

A CASE OF ATYPICAL TYPHOID FEVER COMPLICATED BY THROMBI OF THE RIGHT AND LEFT CRURAL VEINS.

By LAWRENCE ASHTON, M.D.,
OF DALLAS, TEXAS.

Miss B., a resident of Norwich, Connecticut, aged twenty-seven, after two years spent abroad, reached Dallas, September 27, 1895, with slight fever, believed to be due to fatigue incident to travel and change of climate. Not improving, however, I was called to see her eight days after her arrival, when, upon examination, the following conditions were found to exist: Great nervousness, persistent headache, nausea, constipation; tongue coated, with red edges; temperature 103° F., morning; 101° F., evening; pulse 120. This condition of things continued until October 30th, when the exacerbations occurred each evening, ranging from 104° F., in the evening to 101° F., in the morning. November 5th she had a profuse hemorrhage from the bowels, with extreme prostration. The hemorrhages occurred at intervals until November 15th. There were no hemorrhages after this time, but the stools were liquid, very offensive, and passed involuntarily. Fever continued until December 12th. There was constant delirium, which continued for weeks after the patient was free from fever. For several weeks it was necessary to use the catheter, on account of inability to pass urine.

On December 1st the patient complained of pains in the right leg, which soon became greatly swollen, tense, and hot. The pain was so great that nothing afforded relief but large doses of morphin and atropin, administered hypodermatically. As the inflammation in the right limb was subdued, the left leg showed the same conditions, with the most intense suffering imaginable. Later there was marked neuritis of the hands and arms.

Treatment.—The diet, from the beginning, was chiefly of milk, or milk diluted with limewater, aerated waters, or malted milk and beef juice. For the pyrexia the Brand method was strictly carried out, the patient remaining in the bath from fifteen to twenty minutes, being then taken out and wrapped in dry sheets and covered with a light blanket. The antiseptic medication consisted in the administration of small doses of corrosive sublimate, naphthol, carbonate of creosote, and guaiacol. Tympanites and abdominal pain were controlled by turpentine stupes. Hemorrhages from the bowels were treated with opium and acetate of lead, or hypodermics of morphin and strychnin, and by means of an ice-bag applied over the abdomen, which measures, for the time being, always controlled the hemorrhages. The enlargement and edema of the lower limbs, due to thrombi in the crural veins, was treated by elevation of the limbs and local applications of flannels wrung out in extract of witch hazel as warm as the patient could bear it. Strychnin, hypodermically, was administered constantly in gradually increasing doses, until she was taking one-fifteenth of a grain every four hours. She received but little medicine by the mouth, as the stomach rejected almost everything. Alcohol, in any form, was never retained.

The patient made a slow recovery, and not until April 15th, nearly seven months from the time she was taken sick, was she able to return to her home.

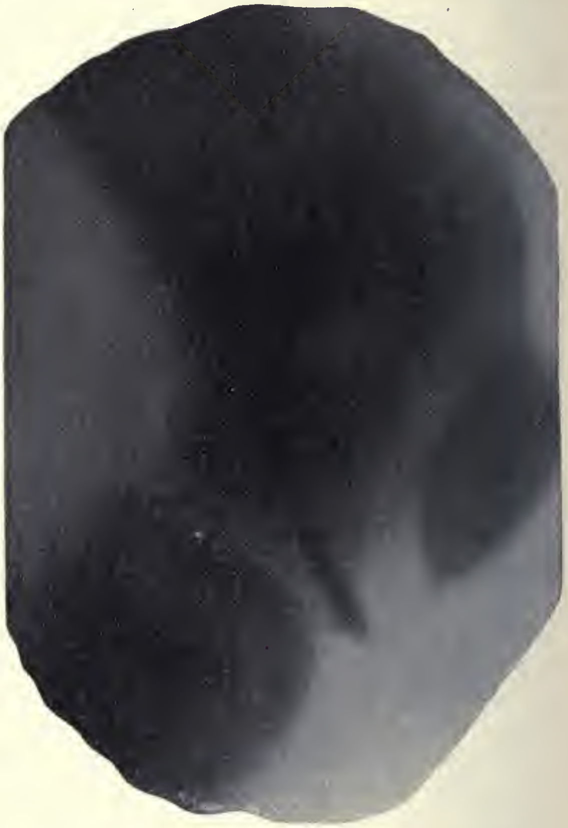
FOREIGN BODY IN THE KNEE-JOINT LOCATED BY MEANS OF THE ROENTGEN-RAY.

By HERBERT B. PERRY, M.D.,
OF AMHERST, MASS.

THE accompanying X-ray photograph is that of the knee of a girl nine years of age. It was taken to demonstrate the presence of, and to locate if possible, the five-eighths-inch missing point of a pair of scissors with which she had wounded her knee four days previously. The history of the case is as follows: Two days before I saw her, while kneeling on the floor, she felt a sharp pain in the left knee. Investigation by her mother revealed a wound about four lines in length, a little below and external to the median line of the patella. What appeared to be the bottom of the wound was cleansed thoroughly, and the child was put to bed.

The scissors found upon the floor where the accident occurred was an old pair, and no member of the family was sure that the broken blade was not in its then condition prior to the accident. When I was called in to see the patient I found that the knee was swollen, hot, tender, and painful. I advised the use of the X-ray, and the procedure was carried out at the Physical Laboratory of Amherst College by Professor Kimball. An electrical current sufficient to produce a 2½-inch spark was used. Before the plate was exposed, I was able to locate the foreign body in the joint by the use of the fluorescent screen. In order to have some landmarks to work by in operating for its removal, a long, flat key, the only available piece of metal of proper shape and size, smeared on the point with ink, was passed between the light and the knee, and the knee and screen, until it was seen to touch the skin at the location of the foreign body. In this way both the distal and proximal end of the scissors-point was noted on the external and internal surfaces of the knee. The mark was afterward made indelible with nitrate of silver.

The next day the child was etherized, the site of the operation having been rendered aseptic, and an Esmarch bandage was applied. An incision was made from the lower border of the patella downward about three inches. The path of the scissors-point could be seen, the blood having settled along its course, and showing clearly in the surrounding bloodless area. It was necessary to open the joint and to divide part of the external lateral ligaments and the quadriceps extensor tendon. Extreme flexion of the leg on the thigh was necessary to enable me to reach the foreign body, and it was found to be embedded for nearly its entire length in the extreme posterior part of the articular surface of the external condyle. The skiagram apparently does not indicate that such was the case. The fact that it was entirely buried may be accounted for by the accidental extension of the leg while the child was being etherized.



Skiagraph of a scissors-point in the knee-joint of a child.

After ten days the dressings were changed for the first time. The wound had healed nicely. During this time the patient had not suffered pain, and the temperature did not rise above normal. Six weeks have elapsed since the operation. The knee is movable, and I look for practically complete recovery of function.

MEDICAL PROGRESS.

Supposed Precocious Menstruation.—The reports of menstruation in infancy and childhood which are so often made are not to be too readily accepted. COMBY (*L'Union Médicale*) found ordinary vulvo-vaginitis sometimes accompanied by distinct hemorrhages. In three cases of children, of two, three, and six years of age, which had been mentioned as instances of precocious menstruation, he found that the blood came not from the uterus, nor from the vagina, but from vascular granulations about the meatus urinarius, which bled freely if touched. This condition was cured by weak injections of permanganate of potassium and cauterization with a 1 in 50 solution of nitrate of silver.

A Point in the Diagnosis of Renal Calculus.—BROOK (*Brit. Med. Jour.*, December 19, 1896) narrates two cases of renal calculus in which the diagnosis was obscure. In both cases heavy percussion below the tip of the last rib caused acute stabbing pain in the loin. The writer looks upon this symptom as a most valuable, though little known, means of diagnosis of renal calculus. In his two cases the urine was repeatedly examined microscopically, but neither blood or pus was ever found. The absence of this peculiar pain does not, of course, negative the existence of a stone. The character of pain caused by percussion in a case of impacted gall stone or abdominal inflammation, such as appendicitis, is not the same as when a renal calculus exists.

Relation of Adenoids to Deafness.—FRANKENBERGER (*Centralbl. f. Chir.*, No. 50, 1896,), who examined 159 children in the deaf mute institute in Prague, found hypertrophy of the tonsils in 94—that is, $59\frac{5}{10}$ per cent. In 42 cases there was evidence of alterations in the middle ear, either chronic suppuration or its sequela. Of these 42 children, 37—that is, 88 per cent.—had adenoid growths. The frequency of the occurrence of adenoids in deaf mutes has often been noticed, and the writer believes, with other recent authors, that deafness is many times due to acquired disease in cases which are classed as congenital, and that prophylactic and therapeutic measures would have saved hearing and speech in such cases.

The Application of Schleich's Method of Cocainization.—GOTTSTEIN (*Centralbl. f. Chir.*, No. 50, 1896) published results of cocainization by the method of infiltration in 118 operations. Nearly one-half of these were for the extirpation of tumors. There were eight cases of resection of the vas deferens, two cases of strangulated hernia, ten gastrostomies, and several exploratory laparotomies. One advantage of this method is that the patient can usually get down from the table immediately after the operation, so that hypostatic pneumonia, which so often follows ether operations in feeble patients, is avoided. It was a great pleasure to observe how slight a reaction followed these "major" operations. As far as possible an Esmarch bandage was used after the injections were made. The anesthesia usually lasted thirty minutes, sometimes still longer. In only two cases was there any evidence of cocain intoxication.

A Giant Fetus.—OLANO (*El Monitor Medico*) performed an autopsy upon a well-formed woman, aged thirty-nine, who had died after four days of labor pains and an unsuccessful attempt to deliver the child by forceps. The fundus of the uterus was just under the liver. It contained a well-formed female fetus with the head downward, which measured 68 centimeters (27 inches), and weighed 10,000 grammes (26 lbs.). The mother had had three normal and two premature confinements. There was non-medical and purely subjective evidence to the effect that the woman was many months past full term.

Respiratory Gymnastics in the Treatment of Disease.—CAMPBELL (*British Medical Journal*) finds that respiratory exercises favor the circulation of blood and lymph and promote the normal action of the abdominal organs. They are of service, therefore, not only to patients with cardiac affections, but to many of those who suffer from functional nervous diseases. Respiration is of three types—diaphragmatic, that in which the lower ribs are involved, and a purely costal respiration. That type is chosen, which is especially fitted to the disease to be treated.

Abscess of the Brain—Localization, Treatment.—STIERLIN (*Korrespondenzbl. f. Schweiz. Aertze*, No. 15, 1896) reports a case in which a railroad laborer, twenty-six years of age, about eight days previous to his entrance into the hospital, was struck on the forehead with a large stone with such force as to render him unconscious for half an hour. A bandage was applied and, in the meantime, he went about feeling tolerably well. On admission to the hospital a large gaping pus-discharging wound was found in the soft parts covering the left forehead. The base of the wound was formed by the frontal bone denuded of periosteum, in which there was a gaping, depressed fracture. In the bone fissure radiating from the central depression a piece of felt from the patient's hat was included. Resection was performed. The dura was intact. A tampon of iodoform gauze was used. In the beginning no marked reaction was discernible. About the tenth day, however, the patient was overcome by a heavy drowsiness and psychical changes were observed. About fourteen days after the operation involuntary urination and defecation supervened. Increasing debility, apathy, and a continuously increasing diminution in the force of all the vital functions, together with a noticeable paralysis of the right side of the face, set in. There was no fever. The diagnosis of abscess of the brain was made. Eighteen days after the onset of the first symptoms, the presence of pus in the brain having been first positively ascertained by an exploratory puncture, a large abscess in the left frontal lobe was opened. More than 100 cubic centimeters of ropy pus was evacuated, the cavity being twelve centimeters in width. The cavity at first was drained with strips of iodoform gauze; later, with rubber tubing. A small pulsating, prolapsing portion of the brain substance was held in place by compresses. The wound in the brain substance required more than two months for cicatrization. Three and a half months after the incision, and about forty-five days after complete cicatrization of the wound, the defect in the bone was covered up by grafting. Recovery was complete. As regards the exploratory puncture in cases of brain-abscess, Stierlin advocates the method of von Bergmann, namely, to use the knife instead of the needle, in substantiation of which he cites a case in which, after trephining, the exploratory puncture was negative, notwithstanding that the autopsy showed a large abscess in the parietal lobe just beneath the part trephined.

Bronchial Asthma Occurring Only During Menstruation.—The so-called asthma uterinum is of rare occurrence, and its existence has been disputed by some. Katz reports a case in which the sputum possessed characteristic features of asthma, namely, Leyden's crystals, spirals, and sago-like pellets. The attacks of asthma and this characteristic sputum were present only during the menstrual period. The patient, aged thirty-two years, was in every other respect healthy. Nothing in her family or personal history explained the occurrence of these asthmatic attacks, which had existed about a year.—*Deutsche Med. Wochenschrift*, Dec. 10, 1896.

An "Epidemic" of Appendicitis.—GOLOUBOFF (*Gazette Médicale*, December 26, 1896) considers the possible epidemic nature of appendicitis. He refers to the usual rarity of the affection in Moscow, and to the sudden appearance there of a number of cases. Three pupils in one school who occupied the same bench were attacked by the disease on the same day. Appendicitis is thought to be caused by the microörganisms of the intestine. Under the action of causes as yet unknown, the coli bacillus, the streptococcus, and staphylococcus suddenly take on a more than ordinary virulence. Golouboff compares the epidemics of appendicitis to the little epidemics of tonsillitis which frequently occur.

Artificial Respiration in Intrathoracic Operations.—TUFFIER and HALLEON (*Gazette Hebdom. de Med. et de Chir.*, No. 95, p. 1131) report experiments upon dogs under chloroform, in which, by means of a tracheal tube and bellows, the movement of the lung may be so contracted as to avoid pneumothorax after opening the pleural cavity, and to simulate normal respiration during such operations. By this method, aided by an incandescent lamp, much of the pleural cavity and the mediastinum is accessible to operation. The insufflated air should he sterilized by heat. No complications or disturbance of pulmonary circulation have followed this procedure.

THERAPEUTIC NOTES.

Cresal in Typhoid Fever.—POSAGUY (*Medicius Koié Obosrenié*) has employed cresal in eighty-seven cases, as an emulsion in water and given in milk. Beginning with fairly large doses, these were increased up to forty-five or even to ninety drops per day.

There were no complications and no changes in the urine. The tongue and mouth became clearer, meteorism diminished, the patients felt well, and appetite returned. The stools decreased to one or two per day, lost their offensive odor, and took on their normal form. The febrile period was diminished to six days. Finally, a mortality of 2.41 per cent. resulted.

What Cases of Obesity are Suitable for Thyroid Treatment?—According to a writer in the *Gazette Hebdomadaire*, January 24, it is desirable to distinguish two classes of fat people. Those who are young, vigorous, and plethoric, and who are good livers, receive little or no benefit from thyroid treatment. Such cases are benefited by a dietetic regimen. On the other hand, fat persons that are pale, soft, and flabby, and inclined to edema, receive benefit from the ingestion of the thyroid gland. They lose weight rapidly, oxidation is increased, and nutrition improved. This "torpid" obesity, which has some points of analogy with this edema, is seen most frequently in women, while "florid" obesity occurs usually in men.

Enteroclysis in Gastro-Intestinal Disorders.—THIERCELIN (*Revue de Ther. Med. Chir.*, No. 23, p. 709), after a historical résumé, considers that flushing of the intestinal tract is advisable, and should be tried in every case, acute or chronic, of gastro-intestinal trouble, especially in children, as in this way the intestinal canal is freed of irritating, fermenting material, fermentative germs, and their toxic products, much better than by purgatives. When fever is present, one or two liters, at 25° C., can be injected very slowly several times a day. In the algid types, however, water, at 38° to 39° C., is used. The absorption of some of the water acts favorably upon the thirst, the hepatic and renal circulation, and the cardiac action. Boiled water, weak saline solution (seven grammes of sodium chlorid to the liter), weak boric-acid solution, alkalin, and lactic-acid solution, may be used, according to the case. The injections should not be continued longer than four or five days. They are contraindicated in cases of cardiac affection, in stricture of the intestine, and in ulceration, though some favorable reports of the use of a creolin solution in typhoid are on record.

Contraindications to Salicylates in Acute Articular Rheumatism.—According to JACCOUD (*Semaine Médicale*, No. 54, p. 34), salicylate of soda is contraindicated in acute articular rheumatism with marked visceral complications. In such cases he uses the tartrate of antimony in large doses. Opium is incompatible, as it prevents the elimination of the drug by diminishing the emesis and diarrhea. Fever is permanently reduced by the third day, and no case of pericarditis has been observed. The author quotes from statistics the proportion of cardiac complications under salicylates as being from four to eight per cent.

Salicylate of Soda for Hemoptysis.—MAYS recommends, in the *Journal de Médicine*, Paris, January 24, for the treatment of the profuse and persistent hemoptyses which sometimes occur in patients with rheumatic or gouty diathesis, salicylate of soda, which he has used with remarkable effect in such cases.

THE MEDICAL NEWS.

A WEEKLY JOURNAL
OF MEDICAL SCIENCE.

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SATURDAY, MARCH 20, 1897.

PATHOLOGY GONE MAD.

WE have had occasion to note from time to time that the persons devoting themselves to one particular line of work become so engrossed with their individual studies that their minds receive an indelible impression, which tinctures all they write and say; and particularly if they are studying pathology their point of view actually becomes pathological. We believe that no one will deny the assertion that the whole object of bacteriological, pathological, and other medical studies is the improvement of our knowledge in regard to the process of disease, in order that we may gain information as to the proper methods for the relief, or cure, of the malady before us. Certain it is that the patient, and the average physician, considers the treatment of his case far more important than the study of the pathological lesions underlying it. The one brings direct results, the other only indirectly helps the individual who is in difficulty.

Our attention has been called to this matter, first, by an exceedingly able and practical article by Sir Dyce Duckworth, in the Liverpool *Medico-Chirurgical Journal* for January, 1897, in which he points out the fact that, while pathological and bacteriological studies are of immense value, they are worth nothing to practical medicine unless they point the way toward relief; and the antithesis of this is found in an extraordinary editorial in *The Journal of the American Medical Association* for March 6, 1897, entitled, "The Materia Medica Collection of the Smithsonian Institution." Evidently the writer is a pathologist, who has so lost sight of the ultimate reasons for his existence as to express views which are in direct opposition to every effort of the majority of the profession, and he is also guilty of the following sentence, which we have endeavored to parse, with poor results: "In this time of improved medical education, when laboratory, clinical, and dead-house teachings, with improved hygienes, tend daily to make the administration of drugs the approbrium of medicine, and much of the study of our own profession a mere meditation upon death." He then proceeds to quote Dr. Loomis of New York as having said: "Young men prescribe the drugs, but we old fellows don't believe in them."

The position of the physician who is optimistic in regard to the value of remedies in the treatment of disease is certainly that of the man who is striving after that which is desirable and good, but the position of one who is a therapeutic nihilist is equivalent to that of a man who, standing on the housetop, announces to the world that "There is no God." Theapeutics, or the treatment of disease, lacks certainly not because it is at fault itself, but because pathologists are unable to explain the process of disease. When the underlying factors producing disease are laid bare to us by the pathologist it is usually found that the therapeutist can devise a means for its relief or cure, and in many instances practical physicians have managed to relieve maladies, the causes and characteristics of which the pathologists have been unable to explain or discover.

THE MEDICAL TREATMENT COMPANY OF NEW YORK.

IF a rest from his labors is what the doctor longs for, verily his millenium is at hand. Hospitals, clinics, and dispensaries have long since considerately lightened his labors, but it remained for a private company to put him completely at his ease by providing for patients too lazy or proud to go to dispensaries. The general practitioner has for some time been in doubt as to whether the public really needed him, but now all doubt has been cast aside, and he can get a job in the woodyard of the Charity Organization Society or retire to the almshouse, from whose tranquil precincts he can watch the death-throes of legitimate medicine.

During the past month doctors about town have been asked to serve as district physicians for the above-mentioned company. Extracts from its prospectus are as follows:

> "THE MEDICAL TREATMENT COMPANY.
> INCORPORATED UNDER THE LAWS OF
> THE STATE OF NEW YORK.
> OFFICE: 19 PARK PLACE, NEW YORK CITY.
>
> "For $1 a month the Medical Treatment Company provides a doctor as often as you need one, who will treat you or your family at his office, or at your home, as the severity of the case requires, and has the prescriptions filled at the druggist's without extra cost to you. . . . The medical staff is composed of physicians who are graduates of the leading medical colleges of this state, and are in every way fully qualified by experience to treat any case of disease. . . . The birth of a child is a physiological condition, and therefore not classed under medical treatment. Under our system, upon payment of $5, at the time of the birth, to the attending physician, the mother will receive proper attention during convalescence."

To the unthinking the workings of this company may appear somewhat revolutionary, but to one who has watched the signs of the times it seems only the legitimate outgrowth of the commercial spirit which has invaded and is likely to engulf medicine. That such a company may receive patronage enough to insure financial success is possible, and that it can hire regular physicians to do its work is probable. The extent to which the public will go for "bargains" has no limit and the willingness with which doctors will do contract work is well known. This scheme simply organizes the city of New York into a vast lodge for the purpose of getting medical service and medicines at rock-bottom rates. That the services and medicines obtained will probably be on a par with the price paid for them will undoubtedly be true, but that generally holds good for all "bargains" and does not render them less popular.

However unethical the whole procedure seems to us of the old school of ethics and practice, we see nothing illegal in it, and the profession stands in much the same position toward it as the small shopkeeper does to the big department store. The great possibilities of the movement are all that should startle us, as the same reprehensible practice has been carried on for twenty years by the Society of the New York Hospital in its out-patient department. In fact "The Medical Treatment Company" is more worthy of respect as it pays its physicians a salary.

Surely the (downward) path of the doctor is being made easy and he may soon say with Solomon, Eccl. iii, 9, "What profit hath he that worketh in that wherein he laboreth?"

MUNICIPAL FREE BATHS IN NEW YORK.

PLAGUE and pestilence follow on the heels of famine for the reason that famine and destitution bring squalor and filth. *Pari passu* with the evolution of the germ theory of disease, the conviction has grown that the fundamental and universally applicable prophylaxis against all disease lies in hygienic habits and sanitary surroundings. Fresh air, and an abundance of it, and a generous supply of pure water are nature's great safeguards against disease. The one destroys disease and gives to the blood corpuscle the power to resist it, while the other washes it away beyond the possibility of doing harm.

It is with no slight degree of satisfaction, therefore, that we read the report which has just appeared of the committee on public baths and lavatories which was appointed two years ago by the mayor of New York. The committee has evidently given a vast amount of investigation and study to the subject; the report is replete with information and valuable suggestion.

The necessity for public baths was at once made apparent when the committee visited the tenements and lodging-houses to learn what bathing facilities were there afforded. Out of 480 houses visited in the slum districts, it was found that only 17 had bathrooms. Particularly inadequate provisions for bathing in the lodging-houses were noted, the patrons of many of which are, by reason of their bodily filth, a menace to the safety of the community. In 112 lodging-houses 15,233 persons are allowed to lodge by the authorities. Of these 112 houses 55 are without baths of any kind, and in these 55 houses 6372 lodgers are allowed. Fifty-seven houses have 95 baths, and the whole number of lodgers allowed in these houses is 8861. Fifty-six of the baths ostensibly have hot water. In 54 houses the baths are free, in 3 they are paid for. The average number of baths taken daily is 546. The replies of some of the patrons of the houses, when asked their opinion of the bathing accommodations, were: "The tubs are never cleaned out, from the appearance of them;" "can't get a good wash without hot water;" "find too many old medicine-bottles for my taste;" "bad enough to sleep in a lodging-house, without using their baths." The committee also quotes from the report of the Gilder tenement-house committee the statement that, out of a population of 255,033 covered by the committee's inspection, only 306 persons had access to bath-rooms in the houses in which they lived.

It is interesting to know how similar conditions are met in the cities of the old world. The committee found that the city of Birmingham, with a population about the same as Boston, possesses four complete sets of well-appointed baths, and one open-air swimming bath. Two of the baths have a Turkish bath attached. In no case are the English or continental baths free, and the operating expenses are nearly met in almost every case by the fees. At Birmingham the fees are from one penny to sixpence, and a complete Turkish bath, including shampooing and the use of a private dressing-room, costs but one shilling. Liverpool is but little behind Birmingham. In "municipal" London over £500,000 is invested in public baths and laundry establishments, which cost £110,000 annually to maintain. Glasgow, not satisfied with providing public baths and laundries, has considered the project of gratuitously teaching everybody to swim.

At the present time the principal facilities afforded to the public of New York for bathing, by both the municipality and private philanthrophy, consist of fifteen floating baths along the water front, which can be used of course only during the summer. How much these are appreciated and how well they are patronized is shown by the fact that from June 20 to October 10, 1896, they supplied accommodation to more than five million bathers.

The committee's idea of a public bath is an establishment under the control of the municipality where a hot or cold bath may be obtained at any time during the year. The plans propose a two-story bath-house containing eighty baths, of which forty-two will be for men, fifteen for boys, and twenty-three for women. Only fourteen of these will be tub baths, the rest being spray baths, mostly of the "ring" variety. The house will be divided into male and female departments. The baths themselves are to be constructed of white-enamelled iron, marble, and unbreakable glass. Each bath will have two compartments—a dressing-room and a room for the bath itself. The floors throughout will be of solid masonry, no iron beams being used, the object being to prevent cracking. The flooring will be of white vitrified tiling. In the basement there will be a free lavatory containing water closets, etc. On the second floor will be a laundry. The German or "Gegenström" system is recommended for heating the water. The waiting-rooms and main bathing-halls will have an abundance of windows and skylights and light-reflecting surfaces. The exterior will be classic in style, and it is recommended that the material used be light in color. The baths, it is said, should readily accommodate 1,000,000 bathers a year, if kept open as required by law and properly administered.

It is recommended that six such bath-houses be constructed in the most desirable localities of the city on lots 100 x 50 feet. The style of bath approved is the spray or shower bath.

It only remains now to secure the appropriation of the necessary funds to put this health-giving, life-saving system into practical operation. The laws of 1896 authorized the Commissioner of Public Works, with the consent and approval of the Board of Estimate and Apportionment, to erect in the public parks so many structures for free public baths and public comforts as the Commissioner and board should deem necessary and proper, and sanctioned an appropriation of $200,000. In accordance with this provision one bath-house, to contain sixty-nine baths, will be built in the new East Side Park, but it is hoped that the law may be so modified as to permit the erection of the other bath-houses in more suitable and convenient places.

ECHOES AND NEWS.

Does Small Lung Capacity Predispose to Consumption?—Dr. Edward Playter, of Ottawa, Can., desires to investigate this question, and asks the profession to send him data giving exact measurements of individual cases.

Diphtheria Regulations in Buffalo.—The Board of Health of Buffalo has issued a circular announcing the fact that it is prepared to make bacteriological examinations of cultures from all suspicious throats, and for the convenience of the profession has placed culture tubes at all the police stations throughout the city.

Anesthetics and the Laity.—Governor Black of New York has signed the bill making it a felony for a person other than a duly licensed physician to have an anesthetic on his person with the intention of administering the same to another person, and makes the finding of the same on the person by any one presumptive evidence of guilt.

Anti-cigarette Bill.—The New York Assembly committee on public health has reported favorably a bill prohibiting the sale of cigarettes to minors, and providing that dealers in cigarettes shall pay a license fee. The bill is amended by making it a violation to sell within 250 feet of a church or school. The bill fixes the license fee at $50.00.

Epilepsy Mistaken for Hydrophobia.—At a recent meeting of the Paris Academy of Medicine, M. Megnin pointed out that current statistics regarding hydrophobia were entirely misleading, as many dogs were declared mad when they simply had epileptic fits. He added that dogs, like human beings, seemed to be more inclined to nervous diseases than formerly.

Ordinance Against Cocain.—It is reported that the victims of the cocain habit have become so numerous in Chicago that an ordinance has been introduced prohibiting the sale of remedies for catarrh and other diseases, which contain cocain. In the last two months over forty victims of the drug have appeared in police courts and elsewhere. Several of them have been well-known men and women, who say they were brought to their present condition by using catarrh cures.

New Quarantine Hospitals at New York.—The Quarantine Commissioners have had plans prepared for the improvement of Swinburne Island, and have asked the Legislature for $300,000 with which to put up a permanent hospital plant. The plans that have been prepared and submitted to the Legislature are based upon the latest improvements in hospital building. They call for the erection of fifteen fireproof buildings made of terra cotta and steel. If the plans are carried out, together with proposed improvements on Hoffman Island, New York will have the finest quarantine station in the world.

The Methods of Quacks.—The *Sanitarian* quotes *The Christian Advocate* as saying: "One of the most amusing, and the same time said things, is to see certificates published in religious papers and others, signed by men certifying that they have been cured of disease by a contrivance or a medicine which is an infallible cure for the maladies spoken of, when to our certain knowledge the signers of the said certificates died subsequently of the same disease. We have noticed fifteen cases of as many different remedies, which in corroboration of this statement we could publish were it not for the grief it would give the bereaved, and were we to publish them without the names, the venders would deny the facts.

The Spitting Ordinance Enforced.—For the first time in New York city a man was arrested, March 9th, and punished for making a beast of himself by spitting all over the floor of a public vehicle. It is not a great many years since it was generally believed that spitting in public was one of the rights of a free people, and not a disgusting habit fraught with danger to the public health. On account of the difficulty experienced in enforcing the order of the Health Department of St. Louis, Mo., against spitting on the floors of cars, it has been suggested that a few cars be run over the lines with the placard "spitting cars" attached. The *Sanitarian* remarks that "this innovation would certainly arrest the attention of the human hog and perhaps work his cure."

Connecticut Vital Statistics.—The annual report of the Connecticut State Board of Health for 1896, just presented, gives the vital statistics of the State for 1895. For the ten years ending with and including 1895 it shows a decrease from 1364 to 1358 in the annual number of deaths from consumption, notwithstanding the increase of about 130,000 in the population of the State during that time. Heart disease during the same time rose from 689 to 1016 a year, pneumonia from 827 to 1289, Bright's disease from 344 to 605, and bronchitis from 197 to 539. Deaths from insanity have increased during that period about 60 per cent. Typhoid fever shows the slight annual increase during these years from 244 to 259. Thirty years ago the deaths from that disease were 332, and as far back as 1855 they were 273. The decrease, in spite of defective returns during the earlier period and the large increase of population since, indicates the effectiveness of the measures to check the spread of the disease. The report strongly approves the use of antitoxin in diphtheria, recommends that a public supply of it be free, and commends bacteriological examinations in the same disease.

Obituary.—Dr. Ernest F. Hofmann, of 45 West Twenty-fifth street, New York, died March 11, 1897, after a four weeks' illness. He was born in Coburg, Germany, in 1832, and came to this country when twenty years old. After studying under various doctors in this city, he graduated from the New York University in 1858. For six years his home was in Poughkeepsie. During the war he served for some months in the Sixth Army Corps, subsequently returning to Poughkeepsie, where he had married Miss Laura Skeel, a painter and skulptor. He came to this city in 1867 to occupy a chair in the Medical College for Women, which he resigned after a year.—Dr. George A. Sterling, for many years a leading physician of Long Island, died in Oakland, Cal., March 8th. He was a native of Sharon, Conn., and a graduate of Bellevue Hospital Medical College. He settled in Sag Harbor, L. I., where he became a successful practitioner. He also had a large practice among the wealthy summer residents of the Hamptons. Failing health interrupted his career, two years ago. Last November he left for San Francisco, intending to go to the Sandwich Islands and establish a coffee plantation, and, if possible, regain his health. When he reached San Francisco he was too ill to proceed. Death was due to stomach disorder. He was about fifty-five years old.

Bones Fractured by Muscular Action.—Dr. C. J. Edgar, in the *Montreal Medical Journal*, reports an interesting and unusual case of fracture of the scapula by muscular action alone. A man aged about forty-five, tall, spare but muscular, was driving a heavily laden team down a somewhat steep incline and walking beside the load, when part of the harness broke, and, to prevent the wagon running upon the horses, he caught hold of one wheel by the spokes with both hands. The impetus, however, was too great, and he was gradually forced over and down upon one knee. As his knee touched the ground, he felt something give way in his left shoulder and lost his hold. On rising to his feet he found the arm powerless and very painful, the pain being referred to the shoulder joint, which he thought to be dislocated. On manipulation of the scapula, it was found that the entire inferior angle was torn away and separated from the rest of the bone by half- or three-quarters of an inch. Firm union was secure in seven weeks, leaving, however, a very marked ridge of callus over the seat of fracture. Motion was perfect, and the arm regained all its former usefulness. A case has been recently reported from San Francisco in which the pitcher of a baseball club fractured his humerus in three places, by the effort he put forth in throwing a line ball from third to first base. And within ten days thereafter another similar case occurred at the same place, the fluoroscope showing a double fracture of the bone.

ANNOUNCEMENTS.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THE preliminary program for the Fourth Session, to be held in Washington, D.C., May 4, 5, and 6, 1897.

President, William H. Welch, M.D., LL.D., Baltimore, Md.

Vice-presidents, *ex-officio*: President of the American Otological Society, Dr. Arthur Mathewson, Brooklyn, N. Y.; President of the American Neurological Association, Dr. M. Allen Starr, New York City; President of the American Gynecological Society, Dr. James R. Chadwick, Boston, Mass.; President of the American Dermatological Association, Dr. James C. White, Boston, Mass.; President of the American Laryngological Association, Dr. Charles H. Knight, New York City; President of the American Climatological Association, Dr. E. Fletcher Ingals, Chicago, Ill.; President of the Association of American Physicians, Dr. J. M. DaCosta, Philadelphia, Pa.; President of the American Association of Genito-Urinary Surgeons, Dr. Francis S. Watson, Boston, Mass.; President of the American Orthopedic Association, Dr. Samuel Ketch, New York City; President of the American Physiological Society, Dr. Russell H. Chittenden, New Haven, Conn.; President of the Association of American Anatomists, Dr. Frank Baker, Washington, D.C.; President of the American Pediatric Society, Dr. Samuel S. Adams, Washington, D.C.; President of the American Surgical Association. Dr. John Collins Warren, Boston, Mass.; President of the American Ophthalmological Society, Dr. George C. Harlan, Philadelphia, Pa.

Chairman of the Executive Committee, Landon Carter Gray, M.D., New York City.

Secretary, William H. Carmalt, M.D., New Haven, Conn.

Treasurer, Newton M. Shaffer, M.D., New York City.

PROGRAM:

The meetings of the Congress will all be held in the Columbia Theater, corner of Twelfth and F streets, N. W.

TUESDAY—MAY 4TH.

A business meeting of the Congress will be held from 1.30 to 2 P.M.

From 2 to 3.30, a general meeting of the Congress, under the direction of the American Ophthalmological Society.

Subject: "The Gouty and Rheumatic Diatheses, and their Relation to Diseases of the Eye." Papers will be read by Dr. Charles Stedman Bull of New York City; Dr. S. Oliver Richey of Washington, D. C.; Dr. S. D. Risley of Philadelphia, Pa.; Dr. Robert Satler of Cincinnati, Ohio; and Dr. R. A. Reeves of Toronto, Canada; to be followed by a discussion, in which Dr. J. M. DaCosta of Philadelphia, Pa., and Dr. Henry M. Lyman of Chicago, Ill., members of the Association of American Physicians, and others, will participate.

From 3.30 to 5 P.M., a general meeting under the direction of the American Otological Society.

Subject: "Otology in its Relations to General Medicine." A paper by Dr. Clarence J. Blake of Boston, Mass.

WEDNESDAY—MAY 5TH.

From 2 to 5 P.M., general meeting of the Congress, under the joint participation of the Association of American Physicians, the American Physiological Society, and the American Pediatric Society.

Subject: "Internal Secretions Considered in Their Physiological, Pathological, and Clinical Aspects." Dr. William H. Howell of Baltimore, Md., and Dr. Russell H. Chittenden of New Haven, Conn., will speak in behalf of the American Physiological Society; Dr. J. George Adami of Montreal, Canada; Dr. James J. Putnam of Boston, Mass., and Dr. Francis P. Kinnicutt of New York City, in behalf of the Association of American Physicians, and Dr. William Osler of Baltimore, M.D., in behalf of the American Pediatric Society. The papers will be followed by a discussion.

WEDNESDAY, MAY 5TH.—EVENING MEETING.

8.15 P.M., address by the President of the Congress, Dr. William H. Welch, Professor of Pathology in the Johns Hopkins University, Baltimore, Md., to be followed by a reception by the President, at Rauscher's, corner of Connecticut avenue and L. street.

THURSDAY—MAY 6TH.

From 2 to 3.30 P.M., general meeting of the Congress, under the direction of the American Orthopedic Association.

Subject: "Deformities of the Hip-Joint, Especially Congenital Dislocations." A paper will be read hy Dr. E.

H. Bradford of Boston, Mass., to be followed by a discussion by Dr. V. P. Gibney of New York City and Dr. Harry M. Sherman of San Francisco, Cal.

From 3.30 to 5 P.M., general meeting of the Congress under the direction of the American Surgical Association. Subject: "The Classification of Acute General Peritonitis; the Prognosis and Treatment of the Different Varieties." Dr. William S. Halsted of Baltimore, Md., will read a paper on the classification, and Dr. Robert Abbe of New York City, on the prognosis and treatment of the different varieties. A discussion will follow, participated in by Dr. John Homans of Boston, Mass., Dr. A. Van der Veer of Albany, N. Y., Dr. Henry H. Mudd of St. Louis, Mo., Dr. Frederick Lange, and Dr. Arpad G. Gerster of New York City.

AMERICAN PEDIATRIC SOCIETY.

THE Ninth Annual Meeting, to be held at Washington, May 4, 5, and 6, 1897.

PRELIMINARY PROGRAM:

1. "The President's Annual Address." Samuel S. Adams, M.D.
2. "A Case of Tic Convulsif." J. C. Wilson, M.D.
3. "A Brief Analysis of 100 Cases of Frank Pneumonia." F. Gordon Morrill, M.D.
4. "A Case of Acetanilid Poisoning in a Newly-born Infant." Irving M. Snow, M.D.
5. "Antitoxin and Intubation in the Treatment of Diphtheritic Croup." J. Lewis Smith, M.D.
6. "Synopsis of Fifty-eight cases of Empyema Operated Upon During 1896, in the Children's Service of Mount Sinai Hospital." B. Scharlau, M.D.
7. "Adherent Pericardium in Children." Wm. Osler, M.D.
8. "Lithemia in Children." B. K. Rachford, M.D.
9. "A Case of Diphtheria of the Eye." T. M. Rotch, M.D.
10. "An Unusual Case of Erythema Multiforme." Floyd M. Crandall, M.D.
11. "A Case of Edema in Infancy." J. P. Crozer Griffith, M.D.
12. "Multiple Purulent Arthritis with Gonococcal Vaginitis." L. Emmett Holt, M.D.
13. "Retained Intubation Tubes; Causes and Treatment." Joseph O'Dwyer, M.D.
14. "Hereditary Tendency in Pediatric Practice." Floyd M. Crandall, M.D.
15. "Retro-pharyngeal Abscess." J. P. Crozer Griffith, M.D.
16. "Abrasion of the Umbilical Wound." Irving M. Snow, M.D.
17. "Murmurs and Heart Lesions in Infancy." William P. Northrup, M.D.
18. "A Frequent Significance of Epistaxis in Children." J. Henry Fruitnight, M.D.
19. Report of the Committee on the Collective Investigation of Antitoxin Treatment of Pharyngeal Diphtheria in Private Practice.
20. "A Case of Suppurative Nephritis." Rowland G. Freeman, M.D.
21. "Varicella Gangrenosa; a Case." W. F. Lockwood, M.D.

A session is to be devoted to the demonstration of apparatus and pathological specimens. It is requested that announcements of such subjects be forwarded as early as possible. In order to group papers on kindred subjects in the same session, the titles of further papers are also requested at an early date.

Samuel S. Adams, M.D.,
President.

William P. Northrup, M.D.,
Chairman of Council,
57 East Seventy-ninth street, New York.

AMERICAN MEDICAL ASSOCIATION.

THE Forty-eighth[1] Annual Session (fifteenth anniversary) will be held in Philadelphia, Pa., on Tuesday, Wednesday, Thursday, and Friday, June 1, 2, 3, and 4, commencing on Tuesday at 10 A.M.

ADDRESSES.

"The Presidential Address," Nicholas Senn, M.D., Chicago. "Address in Surgery," Wm. W. Keen, M.D., Philadelphia. "Address in Medicine," Austin Flint, M.D., New York. "Address in State Medicine," John B. Hamilton, M.D., Chicago.

COMMITTEE OF ARRANGEMENTS.

H. A. Hare, M.D., 222 South Fifteenth street, Philadelphia.

OFFICERS OF SECTIONS.

Practice of Medicine.—J. H. Musser, M.D., Philadelphia, Chairman; J. T. Priestly, M. D., Des Moines, Iowa, Secretary.

Obstetrics and Diseases of Women.—Milo B. Ward, M.D., Topeka, Kan., Chairman; Geo. H. Noble, M.D., Atlanta, Ga., Secretary.

Surgery and Anatomy.—Reginald H. Sayre, M.D., New York, Chairman; Bayard Holmes, M.D., Chicago, Secretary.

State Medicine.—Elmer Lee, M.D., Chicago, Chairman; Louis Faugères Bishop, M.D., New York, Secretary.

Ophthalmology.—G. E. de Schweinitz, Philadelphia, Chairman; H. M. Starkey, M.D., Chicago, Secretary.

Diseases of Children.—Jas. A. Larrabee, M.D., Louisville, Ky., Chairman; H. E. Tulley, M.D., Louisville, Ky., Secretary.

Dental and Oral Surgery.—R. R. Andrews, M.D., Cambridge, Mass., Chairman; Eugene S. Talbot, M.D., Chicago, Secretary.

Neurology and Medical Jurisprudence.—W. J. Herdman, M.D., Ann Arbor, Mich., Chairman; Chas. H. Hughes, M.D., St. Louis, Mo., Secretary.

Dermatology and Syphilography.—A. Ravogli, M.D., Cincinnati, Ohio, Chairman; T. C. Gilchrist, M.D., Baltimore, Md., Secretary.

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[1] There were no meetings held by the Association during the years 1861 and 1862.

Laryngology and Otology.—Wm. E. Casselberry, M.D., Chicago, Chairman; D. Braden Kyle, M.D., Philadelphia, Secretary.

Materia Medica, Pharmacy, and Therapeutics.—W. B. Hill, M.D., Milwaukee, Wis., Chairman; F. Woodbury, M.D., Philadelphia, Secretary.

Physiology and Dietetics.—A. P. Clarke, M.D., Cambridge, Mass., Chairman; Ephriam Cutter, M.D., New York, Secretary.

Wm. B. Atkinson, M.D.,
Permanent Secretary.

THE TWELFTH INTERNATIONAL MEDICAL CONGRESS.

Will be held at Moscow, Russia, August 19–26, 1897.
J. Klein, M.D., President.
W. K. Roth, M.D., Secretary-General.

AMERICAN NATIONAL COMMITTEE.

J. S. Billings, M.D., New York; Frank P. Foster, M.D., New York; Claudius H. Mastin, M.D., Mobile; S. Weir Mitchell, M.D., Philadelphia; Charles A. L. Reed, Cincinnati; George B. Shattuck, M.D., Boston; F. J. Shepherd, M.D., Montreal; George F. Shrady, M.D., New York; W. S. Thayer, M.D., Baltimore.

A. Jacobi, M.D., 110 West Thirty-fourth street, New York, Chairman.

NEW YORK, March 10, 1897.

In a letter dated Moscow, February 14, the Secretary-General, Professor W. K. Roth, communicates the following facts for the information of the American physicians who intend to participate in the Twelfth International Congress, which is to be held in Moscow from August 19th to 26th.

The transatlantic steamship companies refuse one and all any reduction of the usual charges. In their replies, most of which are couched in courteous language (the originals are in the possession of the undersigned), they admit the existence of a trust, or contract, or agreement, which prevents them from lowering their prices; a few are so polite as to express their regrets.

Reductions of fares on Russian railroads are expected shortly. The French, Spanish, Swedish, and Hungarian railroads promise a reduction of fifty per cent.; so do the Italian, for a distance of 500 kilometers; less (down to thirty per cent.) for shorter distances. The Mediterranean lines (Messageries Maritimes, General Italian Navigation Company, Austrian Lloyd) grant from twenty-five to fifty per cent.

The undersigned Chairman is not authorized to issue certificates of any kind in favor of congressists. He will try to ascertain, however, in which way their movements may be facilitated, and may receive a reply in the second half of April. Extracts of papers to be read before any of the sections ought to reach the Secretary-General before June 1st, in order to be printed in the preliminary volume.

A special prospectus containing the final details referring to traveling, lodging, festivities, etc., is promised for a near future. It will be communicated at once to the medical journals and to the press of the country.

A. JACOBI.

CORRESPONDENCE.

TREATMENT OF DIPHTHERIA WITH ANTITOXIN AT THE NEW YORK FOUNDLING ASYLUM.

To the Editor of the MEDICAL NEWS.

DEAR SIR: In the MEDICAL NEWS of March 6th Prof. J. Lewis Smith states that the injurious and negative results of the antitoxin treatment in the New York Foundling Asylum were due to the fact that the serum used was prepared by a French company.

In the last edition of Prof. Smith's valuable text book (page 379) will be found the following statement: "We cannot write so favorably of the use of antitoxic serum in the New York Foundling Asylum. Since a reliable preparation was obtained from the Health Board thirty-one cases were inoculated with the serum. . . . The antitoxin was inserted under the skin on the first day in twelve cases, on the second or third day in seventeen cases, and on the fourth or fifth day in two cases, etc. Results: Recovered, fourteen; died, seventeen; 54.89 per cent. mortality."

The mortality in the Foundling Asylum with the French serum was 45.7 per cent.; with the Health Board serum, 54.89 per cent. These statements from the pen of Prof. Smith show that the unfortunate results of the antitoxin treatment in the New York Foundling Asylum are not due to the employment of an inferior serum. These results do demonstrate, however, that antitoxin is completely useless when used in any severe form of diphtheria. Seventeen deaths in thirty-one cases of diphtheria, that were brought under antitoxin treatment early in the disease, are sufficient evidence of the impotence of this agent in severe diphtheria. On the other hand, sixty-five cases, with only three deaths, is but a repetition of what had happened with other methods of treatment. As good results have been published of numerous other treatments, even bad treatment.

Guttman treated eighty-one cases of diphtheria with pilocarpin, all recovered (*Medical Record*, September 14, 1895). F. Lueddeckens treated eighty-one cases with cyanid of mercury, one death (*Therap. Monats*, 1896, No. 11).

The French serum, which produces such low mortality in Paris, gives in the New York Foundling Asylum 45.7 per cent., and Board of Health serum gives in one series of cases in the New York Foundling Asylum a mortality of 4.6 per cent., and in another series, 54.89 per cent. These wide divergencies in the death-rate admit of but one explanation, namely, the difference in the character of the cases experimented on. In corroboration and substantiation of this explanation, I will cite the variations of mortality in the New York Foundling Asylum before the antitoxin treatment: In 1891 the mortality in this institution was 52.2 per cent.; in 1894, twenty-four per cent. The difference in the mortality in 1891 and 1894 is not due to the treatment; neither is the difference in the mortality in 1895 and 1896 due to the difference in the serum used; but it is the same influence operating in these different years; that is, at one time a high grade, at another time a low grade, of the severity of the disease.

Dr. S. C. Blaisdell of Brooklyn, in a letter to me, states: "I am not using antitoxin at present. My experience with it has been limited to thirty-one cases. I have yet to see a case, either mild or severe, that has been benefited by antitoxin. I am quite certain that it in one case hastened the death of a child where I used it. The temperature of the child (four years old) was before using antitoxin $99\frac{2}{5}$°; in twenty minutes after the injection of 2000 units the temperature rose to 106°. The antitoxin was administered at 11 A.M., child died at 2'clock the next morning. On my own responsibility I will never use antitoxin unless insisted upon by the parents or friends of the patient, they assuming the risk of the result. With antitoxin my death-rate has been thirty per cent., without it about fourteen per cent."

Dr. Wm. L. Johnson of Oxbridge, Mass., writes (*Atlantic Medical Weekly*, February 27, 1897, p. 137): "Could it but really be known how many of the fatal cases that the antitoxin users report were due not to the disease, but to the remedy used, the result would be startling. I have also the notes of thirty cases of diphtheria in private practice, treated with antitoxin and collected from various sources undoubtedly reliable, with the frightful mortality of twenty-three, or nearly eighty per cent."

Professor Smith states that the significance of the term "change of type" of contagious diseases is entirely changed since the discovery of the microbic origin of these diseases, and that the whole subject of "change of type" of contagious diseases should be reinvestigated from the standpoint of modern bacteriology. If the Klebs-Loeffler bacillus is the cause of diphtheria now, it was the cause of this disease a century ago, and the "change of type," so well known in the days of Bretonneau and Trousseau, exists to-day, and has not been changed by the discovery of this bacillus under the microscope. "Change of type" is to-day as it ever has been, inscrutable—even to the bacteriologists. In Trousseau's writings (Vol. II., New Sydenham Society) we find a statement that Bretonneau did not see a single fatal case of scarlatina from 1799 to 1822. In 1824 Trousseau saw with Bretonneau a case of scarlatina which terminated fatally in eleven hours from the onset of the first symptoms. Trousseau adds: "Thus you see that during a quarter of a century scarlatina appeared as an epidemic without showing any severity; then all at once it became changed in its manifestations, and cruelly smote all whom it touched."

JOSEPH E. WINTERS, M.D.

25 WEST THIRTY-SEVENTH STREET,
NEW YORK, March 15, 1897.

Medical Inspectors of Schools.—The New York Health Board has appointed 134 Medical Inspectors of School Children at salaries of $30 a month. Dr. A. Blauvelt, formerly Assistant Chief of the Bureau of Contagious Diseases, was made Chief Medical Inspector, at a yearly salary of $2500.

OUR PARIS LETTER.

[From our Special Correspondent.]

MAX NORDAU'S LECTURES — HYPNOTISM NOW A NEGLECTED PRACTICE IN FRANCE — PFEIFFER'S BACILLUS OF INFLUENZA FOUND IN CONNECTION WITH BRONCHOPNEUMONIA—THE CONSUMPTION OF HORSE-MEAT BY THE POOR.

PARIS, February 17, 1897.

DR. MAX NORDAU, whose permanent residence is now in Paris, where I believe he practises his profession, lectures occasionally at the Institut Psycho-Physiologique de Paris in the rue St. André des Arts, not far from l'Ecole de Médicine. The Institut Psycho-Physiologique is the only place in Paris where regular *séances* in hypnotism are now held, and to the American student familiar with "Trilby" there is an eminent suitableness in the fact that it should be almost on the site where that heroine is supposed to have had her *blanchisserie de fin* in the rue St. Anatole des Arts in the book, that experiments in hypnotic suggestion should still be carried on. But for the ordinary Frenchman that means nothing, for "Trilby" and her history seem absolutely unknown here. Even if you ask for Du Maurier's book at the Bibliotheque Nationale they will bring you Charles Nodier's "Trilby," written in the early part of the century, and can tell you nothing of the other. One is surprised to find, however, that Nordau is not much better known among the French. His lectures attract very little attention and most of his auditors are English and Americans, not always medical students, though the lectures are meant especially for students and are freely open to them.

Some data that may serve as criteria in the judgment of his writings can be gathered from an informal lecture of this kind. He spoke last Thursday on "Psychoses of the Menopause." Nothing new was said, but there was always present that tendency to say half-truths that are paradoxical in an exaggerated form, so as to produce an effect. For Nordau, for instance, there is at the root of all ambition in the male of whatever kind, political, social, or practical, the desire to find favor in the eyes of the female; *i. e.*, a female, some female, though may be unconsciously even to its possessor. Naturally, with as exaggerated an idea of the influence of sexuality as this, the etiology of the psychoses of the menopause and of mental troubles incident to other sexual periods in life becomes merely the consequence of the psychic forces in evolution or involution at these times in the organism. These psychic forces will have serious consequences only on the mental condition of those whose physical organization is not strong enough to stand the strain; in a word, only in the degenerate. Curiously enough, however, while it is his writing on degeneration that has made him famous, Dr. Nordau did not once use the word "degenerate" in his lecture. It is the word that has been consecrated to the description of the groundwork of some of the states which Nordau was describing (by the well-known work of Magnan and his pupils), but he seemed to deliberately avoid the use of it. Perhaps for him degeneration is reserved for that universal downward tendency he has noted in mankind in general, and not the accidental occurrence of beings whose heredity and environment has placed them on a plane below others.

Notwithstanding the seeming pessimistic tendencies of his books, Nordau himself is a very benevolent-looking individual, whose perfectly white whiskers, bald head, and paternal expression, recall the appearance rather of some good old clergyman than of the startling, somewhat anarchistic, innovator in matters of psychological development. He is very much interested in the United States (what foreigner is not who has books to sell!) and recalls with evident pleasure his visit to us during the Chicago Exposition.

I said that the Institut Psycho-Physiologique was the only place in Paris where regular *séances* in hypnotism were given. It is, too, the only place where hypnotic suggestion is put forward as a therapeutic measure of any importance in general practice. The general character of the experiences there are not, I think, calculated to encourage the medical man who may have come to Paris with the idea that the development of hypnotism here in France had placed it on a tangible basis of scientific principles, and had made practical its general medical application. For some time, as Professor Giles de la Tourette, the well-known writer on hysteria, said in a lesson at the Salpétriére not long ago, hypnotism has ceased to occupy serious attention here. It has, in the words of an illustrious compatriot, been allowed to sink into innocuous desuetude. If the dangers, to which patients are exposed by the practice of it, are as serious as Flechsig in his recent inaugural address has made them out to be, it is well that it is so.

A few years ago all the nervous and mental specialists were completely taken up with it. Luys at the Charité, and even the great Charcot at the Salpétriére, were making special studies of it and giving clinical demonstrations of its states and phases, and of its wonderful therapeutic effects. Charcot's work was well done, and some of it remains as the best studies in the subject that we have, but he realized after awhile how fallible and nugatory were scientific conclusions founded on morbid states so protean, so scantily understood, and so little reliable, as those in which the higher stages of hypnotism could alone be developed. He withdrew from the study of it and interest in it faded. Bernheim, at Nancy, is still making exaggerated claims as to its general applicability, and as to the marvellous therapeutic and moral effects of hypnotic suggestion, but these claims are very generally laughed at in Paris. In very suggestible subjects suffering from the severer forms of hysteria it is occasionally used, but one sees suggestion in the waking state more frequently applied.

For the third time within a century, each time in a more alluring form, the subject of the influence of will-power over the wills of others has excited the lively interest of medical men. Each time the subject has sunk back again, not into oblivion, but into a phase of almost complete neglect. Each time something has been gained, but the exaggerated claims of too ardent devotees of the subject have reflected on the study itself and have made its pursuit savor too much of charlatanism. Probably the calmer scientific spirit of conscientious inquiry which will, it is to be hoped, characterize the twentieth century, may enable the next generation (for surely interest in the alluring subject will at some time be aroused for them too) to approach the subject in a more judicial and scientifically disinterested spirit than has been done so far. Meantime expectant students of hypnotism who come to Paris are apt to be seriously disappointed.

A recent report of Dr. Henri Meunier to the Society of Biology seems to show Pfeiffer's bacillus, the influenza microbe, in a new *rôle*, and under circumstances that make its further study very interesting. Dr. Meunier has found it in ten cases of bronchopneumonia in children, in four of which there did not seem to be any connection with *la grippe* in its epidemic form. He thinks that in these cases Pfeiffer's bacillus was the only etiological factor in all of them at the beginning, and in most of them (as pulmonary puncture and repeated blood examinations did not show the presence of other micro-organisms) during the whole course of the disease. The clinical evolution of the disease was that of the ordinary bronchopneumonia, with the exception, perhaps, of even greater depression than usual, and a temperature that was especially rebellious to the action of cold baths.

One wonders if it is not by these cases in children that the disease has been retained as an endemic disease since the great epidemic of 1889. The children, more susceptible because possessed of less vital resistive power, form, it has been suggested, suitable culture media for the attenuated forms of the bacilli. The micro-organism is thus preserved from year to year, and, during specially damp seasons such as this one has been, climatic influences perhaps increase its virulence, the prevalence of bronchial affections give it suitable niduses for growth, and an epidemic such as we have had at Paris once more this year, breaks out. If, as Professor Guiteras thinks, it is this condition of affairs that makes yellow fever endemic in Cuba; why not grippe in the various centers in which it has practically been endemic since its first spread?

The pneumococcus has come to be considered the active pyogenic agent in the purulent lesions secondary to pneumonia, and now comes a report of a case in which it seems to have been primarily and locally pyogenic, without having induced the usual constitutional symptoms.

The case recently reported to the Society of Biology was one in which an open wound had come in contact with some pneumonic sputum. The result was a lymphangitis and purulent infiltration of the neighborhood of the wound. In the pus no other micro-organism but the pneumococcus could be found. This would seem to indicate a hitherto unrealized danger, perhaps, and the necessity of special precautions in surgical and puerperal cases in general practice when pneumonias are being treated.

Occasionally in the outlying districts of Paris one runs across the sign, "Boucherie Hippophagique,"—horse-meat butcher shop. Quite a little horse meat is sold in Paris, though, according to law, it must be distinctly sold as such. Where wages are as low as they are here, and beef as dear (wages are certainly not more than half ours, and beef at least twice as expensive), it is not surprising to find that the poorer classes are ready to take advantage of the chance to get meat cheaply. The meat is darker, less inviting, and when served up usually tougher than beef, but has much the same flavor, and is said to be even more nutritious, weight for weight, than beef. The traffic is regulated very carefully here, instead of being ignored. There has been a growing suspicion for some time in America that horseflesh was being offered as an article of food in various specious forms, such as canned goods and sausages. Owing to prejudice this must be done surreptitiously, and hygiene suffers as a consequence. The more frank, open Parisian method, strikes one as being more commendable.

TRANSACTIONS OF FOREIGN SOCIETIES.

Berlin.

THE NATURE OF OSTEOMALACIA AND ITS TREATMENT WITH OVARIAN EXTRACT—PRESENT POSITION OF INTRAUTERINE MECHANICAL TREATMENT.

SENATOR read a paper on osteomalacia and its treatment with animal extracts before the Berlin Medical Society, January 13th. This is a disease whose etiology is not well understood. It does not appear to be due to a lack of lime salts in the food, as even the poorest diet contains an excess of these salts. Still, certain observers have been able, artificially, to produce osteomalacia in animals by withholding lime salts from their food.

Another theory presupposes a diminished alkalinity of the blood as a result of which the lime salts are dissolved out of the bone, while it is impossible for new salts to be deposited. Experiments along this line in animals have given no definite results.

FEHLING has recently advanced the idea that osteomalacia is due to adverse reflex influences proceeding from the ovaries, and especially affecting the metabolism of the bones. This influence he compares to the influence of the thyroid gland upon the metabolic processes of the body, in certain cases of goiter due to a faulty function of the thyroid. There is doubtless some relation between the ovaries or testicles and the bony system.

With this point in mind, Senator treated with ovarian extract (oophorin) a woman, aged forty-two, who had suffered for ten years with weakness and pains throughout the body severe enough to prevent walking. The bones, and especially the symphysis pubis, presented well-marked deformities. For six weeks the patient received thyroid extract, and after a period of a week, during which time no medication was administered, she was given ovarian extract for eleven days. She lost six pounds during the thyroid treatment, and regained three pounds in the interval, and during the ovarian treatment she lost two pounds. In spite of this fact she improved in feelings and in gait during these periods. Senator attributed this improvement to the medication. Oophorin is easily taken, and does not cause, as does thyroidin, palpitation of the heart, slowing of the pulse, albuminuria, etc., so that he feels justified in recommending its further use.

In the discussion of this paper LANDAU spoke of the success in the treatment of osteomalacia which had followed castration. That a disease should be easily influenced in some cases by the removal of an organ, and in others by the ingestion of its extract, is not at all impossible. In fact, this has been illustrated in the treatment of goiter with thyroid extracts, a subject which a few years ago was as little understood as treatment with ovarian extract is to-day. The benefit of its use in nervous troubles of the climacteric and after castration has been established in numerous instances. The dose should be at least from fifteen to twenty-five grains of the dried material three times daily. It is important to select the ovaries of animals which are neither very young or very old.

VIRCHOW spoke of the different forms of osteomalacia, so different, in fact, that it is doubtful whether they ought to be included under one heading. There is the "red malacia," the "yellow malacia," and a "gelatinous malacia." The first is an irritative process allied to inflammation. The second usually occurs in old people, and is the cause of the brittleness of the ribs which is often met with. It may often affect the extremities. These two forms, of course, have nothing in common. The "gelatinous" form is of especial interest because a peculiar albuminous substance, which exists in these cases in the bones, has been shown by Bence-Jones to exist in the urine. This albuminate is not found in normal bone nor in the bones of those suffering from "red" or from "yellow" malacia. Attention has been called to the removal of the lime salts from the bone, and many experiments have been made to determine what special acid was responsible for this decalcification. This supposition is entirely unnecessary. The carbonic acid of the blood is of itself quite sufficient to remove the lime salts, if once the power of the bones to cause their deposition is taken away or lessened. The primary cause of osteomalacia is probably a neurotic one by which this power of the bones to fix the lime salts is weakened. However, it would be going too far to say that this is the cause in all cases of this disease.

At the session of February 3d, SIMONS said that intrauterine mechanical treatment had been too hastily and unjustly condemned. Treatment with a sound is of service in (1) cases of delayed development; (2) cases of atrophy; (3) cases in which an angular anteflexion exists. Chlorotic girls, for instance, in whom the ovaries are well-developed, or over-developed, while the uterus remains aplastic, suffer from dysmenorrhea and amenorrhea on account of this lack of proportion between uterus and ovaries. If a sound is passed and external massage is lightly made upon the fundus three or four times during the week preceding menstruation, the pain can be greatly diminished. Another benefit from intrauterine treatment occurs in married women with long cervices and sharply anteflexed corpora. This is a frequent cause of dysmenorrhea which continues throughout the menstrual period. In Simons' experience in these cases the use of intrauterine pessaries quickly and completely straightened the canal of the organ. For the accompanying sterility the cervix should be incised bilaterally and posteriorly some weeks before the introduction of the pessary.

LANDAU took exception to these opinions of Simons, claiming that the increase in thickness of an aplastic uterus which followed the measures indicated was due not to a normal stimulation of the organ, but to an inflammatory reaction brought about by the foreign bodies. The introduction of these into the uterus is capable of setting up salpingitis, or pyosalpinx, or abscesses, and may cost the life of the patient.

CZEMPIN said that the inflammation of one sort and another which followed intrauterine mechanical treatment before antiseptics were known does not follow such treatment now if proper precautions are employed. In his opinion, the use of an intrauterine pessary is not only safe but beneficial in such cases of faulty development as Simons referred to. Such cases are not cured by curetting, while they may be cured by the methodical treatment by sounds.

London.

TYPHOID BACILLI IN THE URINE—DEAFNESS FOLLOWING DISLOCATION OF THE JAW—EFFECT OF CASTRATION IN THE ADULT.

At a meeting of the Royal Medical and Chirurgical Society, held February 8th, **HORTON-SMITH** read a paper on *typhoid bacilli in the urine of patients* suffering from typhoid fever. In sixty-one undoubted cases of typhoid fever, careful investigation showed that typhoid bacilli were present in only eight. They were never present in the early stages of the disease, and therefore the diagnostic value of this test is small. In some of the published cases in which typhoid bacilli were said to exist in the urine, sufficient care was not taken to distinguish this germ from the bacterium coli commune.

At a meeeting of the Odontological Society of Great Britain, held February 1st, **BOWDEN** narrated an interesting case of *deafness following bilateral dislocation of the jaw.* The patient, a female, aged thirty-seven, while under the influence of nitrous oxid gas, had the three left lower molars removed. On regaining consciousness it was discovered that there was a bilateral dislocation of the lower jaw, which was easily reduced under the further administration of the anesthetic. Three weeks later the patient was found to be absolutely deaf in the left ear, the deafness being due, apparently, to the violent wrench of the jaw, which, by pulling on the cartilaginous meatus and tympanum, had set up an inflammation which had extended to the labyrinth.

At the session of the Pathological Society, held February 16th, **SHATTOCK** described *the histological characteristics of testicles removed in the radical cure of hernia.* The patient, aged forty-two, presented the usual congenital conditions resulting from extreme hypospadias with cleft scrotum. The testicles were in the inguinal canal and undersized. They did not contain spermatozoa or spermatoblasts. The question of an *internal secretion of the testicle was discussed.* It is unfair to argue from the condition of the child after castration to that of the adult. One result of double castration in the adult is obesity. In certain cases, also, marked mental disturbances follow double castration. These and other questions may possibly be answered by a study of the cases in which the testicles have been removed for enlarged prostate. Most of these patients are rather old for this study. This method of treatment is giving way to the division or partial excision of the vas deferens. Hence, in this more modern operation, while the power of the testicles to produce sperms is put an end to, its "internal secretion" continues. Therefore, a comparison of cases operated upon by these two methods ought to throw considerable light upon the question of after-effects of castration.

BOYD cited a case of a man from whom he removed the testicles for tuberculosis, one some time after the other. Removal of the first was followed by little result, but after the removal of the second the patient became mentally childish, was unable to control himself, and wept without being able to explain why. These symptoms wore off in time. In the second case, that of the older man, the only change observed was obesity. The benefit which sometimes follows in carcinoma of the breast by oophorectomy is noteworthy as pointing to the formation of some internal secretion by the ovaries.

At a session of the Clinical Society held February 12th, **PAGET** called attention to the voracious hunger and thirst after injury or disease of the brain. He collected notes of fourteen cases pointing to the existence of special centers of hunger and thirst close to the centers of speech. Eight of the fourteen patients suffered from a voracious appetite for solid food without much thirst; three suffered from both hunger and thirst, and three had thirst alone. In not one of these cases was the primary injury or disease fatal. With regard to treatment, no harm came in any of these cases from allowing the patient to eat and drink all he chose.

SOCIETY PROCEEDINGS.

NEW YORK CLINICAL SOCIETY.

Stated Meeting, held January 22, 1897.

The President, **ANDREW J. MCCOSH, M.D.**, in the Chair.

THE SURGERY OF THE FACE.

DR. ROBERT ABBE made some remarks on this subject, illustrating them by numerous photographs.

Hare-lip.—Commenting on a series of hare-lip cases, he said that much had been done toward improving this operation during the last twenty-five years. The old Malgaigne operation has been very generally abandoned. In the mild cases of this deformity, there was no occasion for any specially devised operation; all that was needed was a simple plastic operation adapted to the individual case. But in the more serious deformities, *e.g.*, when the nostrils are flaring and the intermaxillary mass is attached to the nose, or where the gum on the prominent side protrudes far out from the end of the nose—no single, simple procedure could be described for any case. In the last few years it had been his practice in operating upon the lip to pare off and sacrifice a portion of the red lip on the best side, and then bring down on the other side a mass to make the center of the lip. It was necessary, however, to take into consideration the displacement of the tip of the nose to the side opposite the cleft; it had to be brought forward with considerable force, and held there. He had recently adopted the plan of inserting two heavy Hagedorn needles, one into the skin under the columna, and the other in the alæ nasæ at the side which rises, driving them in through the lip to the bone. This kept the parts absolutely in place. He was of the opinion that a great deal had been accomplished by this measure in addition to the usual suturing. In double hare-lip it was not always easy to get a good result. The Hagedorn operation was useful here.

Nevus of the Face.—He said that he had treated many scores of cases of nevus of the face. The best treatment consisted in the use of an ordinary large cambric needle, or a hat-pin, heated to a red heat, and then plunged into the tissues of the nevus *at a black heat.* The insertion of the needle at a black heat had much to do with securing a good result. Punctures should be made in this way all over the tumor. There was no bleeding whatever, and the case was usually cured in three or four operations.

Epitheliomata of the Face.—These constitute a serious blemish, and, if neglected, produce enough erosion to become a menace to life. The manner of their removal varies with different surgeons. While not denying that caustics often produce a cure, he would say without hesitation that the knife was in every way superior. Thiersch grafting, combined with the use of the knife, furnished an opportunity for going much more wide of the disease. One of the photographs showed an epithelioma so extensive that it became necessary to enucleate the eye, and to expose the dura mater for a considerable space. Skin grafts were laid upon the dura mater, the bone, the fat of the orbit, and upon the muscle. It was found that these grafts grew upon all these various tissues. It was now two years since the operation, and there was no sign of recurrence. Paget had called attention to the fact that if a "wen" of the scalp were allowed to break, it would become an eroding epithelioma of the scalp. He called these "exploding cysts." Excision of cancers of the lip by a V-shaped incision is one of the most satisfactory of all operations. In the great majority of cases there is no recurrence. Photographs were shown of three cases of extensive cancer of the lower lip, in which the disease had been excised thirteen years ago. They had been seen within a month, and there was still no recurrence. Another case was one which had been faithfully and skillfully treated by an eminent practitioner by caustics, but only with the result of leaving an extensive sloughing area. It was excised about twelve years ago, and had not recurred.

Trifacial Neuralgia.—In the first case reported, the man had suffered from inveterate trifacial neuralgia for many years. He was cured by making an incision into the cheek, breaking through the posterior wall of the antrum, and cutting off the second branch at the foramen rotundum. The operation was not difficult, and the result was good, although a scar was left upon the cheek. In another case, he had operated upon a woman of sixty-six, a year and a half ago, doing Hartley's operation. She had suffered terribly from tic-douloureux for many years. The operation consisted in removing a temporal osteoplastic flap, dividing the branches of the nerve at the foramen ovale, and evulsing them from the Gasserian ganglion. She recovered perfectly under this operation. In another case, more recently operated upon by this same method, he had been unable to bring out the nerves from the ganglion, and had therefore covered the foramen with sterilized rubber tissue, interposed between the Gasserian ganglion and the divided nerves. The patient had had no pain since the operation.

Scars from Burns.—In one instance he had attempted to transplant hair-growing scalp, but although great care was taken to remove the uninjured hair bulbs in the flap, no growth of hair took place.

Depressed Nose.—In a case of marked disfigurement of the face from the kick of a horse, jamming in the nose completely, an incision was made, about an inch long, between the eyes, and the flap drawn up. Then a bone flap was chiseled from the forehead, turned upside down, and fastened in such a way as to make a very fair bridge to the nose.

Depressed Fracture of Skull—Followed by Fits.—In a case of this kind, the operation showed the brain and dura mater adherent. They were separated, a piece of sterilized rubber tissue placed between the two, and the dura mater sutured over it. He had followed this case for a long time, yet there had been no return of the fits.

In another case, treated in the same manner, there had been daily fits before operation, yet up to the time when last seen, a year and a half after the operation, there had been no return of these fits.

Smallpox Pitting.—A young girl, who was terribly disfigured by smallpox pits, was etherized, the skin thoroughly sterilized, and with a sharp knife all the islands of skin between the pocks were shaved down to the level of the pock marks. The surface was then dressed as after skin grafting. The result was a thin, smooth, white cicatrix, and a very great improvement in her appearance.

Fracture of Nose—Emphysema of Orbit.—A man after sneezing violently suddenly developed emphysema of the orbit. The day before he had had a fall, but had thought nothing of it at the time. Of course the fall had fractured the nasal bones, and the sneezing had caused the passage of air through to the orbit. Dr. Abbé said that almost all broken noses were capable of repair, with good result, if treated early, and often even when not treated until late.

Tumor of Skull—Growth Arrested by Partial Excision and Use of the Erysipelas Toxins.—A case was reported of a rapidly growing tumor of the skull in the temporal region, occurring in a baby. The case seemed desperate, but he had operated in the hope that it might be an enchondroma. On chiseling through the skull the tumor was thought to be a very dense sarcoma, growing internally as well as externally. A portion was excised, and Dr. Dunham reported it to be an endothelioma. The child was given the erysipelas toxins. The patient had continued to grow and thrive, but the tumor growth had been arrested. It was the only case in which he had observed any apparent effect from the toxins. Judging from the former rapidity of growth, this child should have been dead a year and a half ago.

Mucocele.—In this case the ethmoid and sphenoid bones were dilated by a large mucous cyst. A wide incision was made in a corner of the orbital cavity. On introducing the finger it was found that the mucocele invaded the cranial cavity. The contents were evacuated and the cyst packed with iodoform gauze. It was allowed to granulate for a time, and then it closed.

Ankylosis of Jaw.—In one case he had excised the neck of the condyle, with a good result. If one cuts down to the point where the bone is narrow, the result will be good. Less than this is likely to result in ankylosis again.

Anthrax.—In this case there was under the jaw a raised, oval patch of purplish color, looking like a very virulent vaccination mark. At the time the photograph was taken the temperature was 103.6° F. Anthrax bacilli were found in the blood and in sections from the diseased area. The latter was excised widely, and at first the patient improved in every way, but he died, four days later, of an extension of the affection.

DISCUSSION.

DR. J. H. EMERSON said regarding the subject of Paget's exploding cysts, that he knew of a lady, ninety-one years old, in whom a wen on the shoulder-blade had ruptured and left a fungating ulcer. The patient had refused treatment at the time, and when seen by Dr. Weir long afterward, his diagnosis had been that of epithelioma. Six months later, or last October, she had developed symptoms of cancer of the stomach, and had died of this disease a few weeks ago.

DR. E. B. DENCH referred to a case in which he had restored an external auditory meatus which had been obliterated by five mastoid operations. The patient was a young man who had suffered from suppurative inflammation of the middle ear, involving the mastoid. When seen by him, there was distinct evidence of pus in the mastoid, and the external auditory meatus was closed. He had done a Schwarze-Stacke operation, throwing the auditory canal, tympanic cavity, and cells into one cavity. No flaps were available, so the wound was left open for about two weeks. The canal was gradually dilated by passing strips of gauze through the narrow opening. The patient was then etherized, and the ear split upward and posteriorly through the entire thickness, the integument was dissected off from the anterior surface of the concha, and the cartilage and overlying cellular tissue cut out. On pulling the ear forward, a small portion of the inferior wall of periosteum lining the bony meatus was found. This was caught and sutured to the anterior flap. The posterior margin of the original wound was then dissected off, and sutured, and at the completion of the operation, the meatus was patent and completely restored, It was possible to cut off the entire auricle without causing much disfigurement. He had operated upon four or five cases of malignant disease of the auricle, and in each case he had been surprised at the freedom from recurrence.

DR. GEORGE WOOLSEY said that he had recently operated for the second time upon a man who had had several injuries to the head, which had caused epilepsy. Replacing the bone flap did not seem to act well. Accordingly, after excising the thickened and adherent dura, some gold-foil had been inserted. The patient had been much benefited, but had had occasional nocturnal fits. At a recent operation he had had an opportunity of seeing the gold-foil, and had found it embedded in a thick, artificial dura, which was adherent to the brain beneath and the scalp above. The foil had been sterilized between the sheets of paraffin paper, and it had been quite difficult to completely remove this wrapping at the time of the first operation. At this second operation, a piece of celluloid had been substituted.

He had been much interested in the case of deformity from smallpox pits. He had shaved down "rum-blossoms" after this method, with good results.

DR. D. BRYSON DELAVAN reported the case of a young man of twenty-five, whose life had been prolonged by two formidable operations for the removal of an angiosarcoma of the nasopharynx; another was an extensive epithelioma of the face, which had been cured by a flap operation and extensive skin grafting; another was a case in which the supraorbital branch of the facial nerve had been extirpated with the result of relieving an intense tic-douloureux. This was two years and a half ago, and there had been no return of the trouble. He asked if Dr Abbé thought the hot needle was preferable to the electrolytic method for treating nevus. Dr. Abbé replied that even with the very finest needle, if the electrolysis were effective, there would be more scar than when the hot needle was used. Dr. Delavan said that scrapings and caustics were very commonly used in epitheliomata, yet he felt, with Dr. Abbé, that the knife was vastly superior. He had been greatly interested in the report of the case in which the toxins of erysipelas had possibly effected a cure.

DR. F. TILDEN BROWN asked if, in the case of loss of the alæ nasæ, the taking of the flap from the arm had given as good a result as would have followed the use of a flap from the face.

DR. ABBÉ, in closing, said that the flap from the arm gave at first a beautiful result, but after a time it was found that its capillary circulation was not the same as that in the nose, and that therefore it presented a more waxy appearance. He thought it would have been preferable to take a flap from the cheek, in spite of the scar that would have resulted. He had removed a number of sarcomata of the upper jaw, with very satisfactory results. The disease was usually confined to the antrum and its walls, and hence could be thoroughly removed by excision of half of the upper jaw. In these cases there had been no recurrence for a long time.

GLANDULAR SWELLINGS.

DR. GEORGE M. SWIFT reported a case of a girl of fourteen, who had had a moderate fever for a few days, followed by a swelling of the post-cervical glands. The swelling had subsided in two or three days, and after another interval of about the same length a similar swelling had appeared on the opposite side, accompanied by fever.

DR. WALTER MENDELSON said that he had seen quite recently a precisely similar case, except that so far it had been confined to one side.

HIGH TEMPERATURE IN AN INFANT FROM THE USE OF HOT BOTTLES.

DR. G. M. SPAULDING reported the case of an infant, three days old, whom he had directed to be kept warm, as it was quite feeble. At 8 A.M., the rectal temperature was 101.5°; at 12 M., 100°; at 6.30 P.M., 107.4° F. At this time the child had a peculiar cry, and was evidently in distress. The temperature of the room was 72° F., but the child was lying near the steam radiator, and was kept artificially warm by a hot-water bag. The artificial heat was at once taken away. At 9 P.M., the rectal temperature was 102°, and at 10 P.M., 100° F. The baby had shown no depression after this high temperature; it had not lost weight; and now, when twenty days old, it was steadily improving in every way.

DR. L. EMMETT HOLT said that he had seen several temperatures of this nature, one or two after surgical operations, thus making the condition all the more perplexing. He thought the prominent feature in these cases was that the temperature was entirely out of proportion to all the other symptoms.

SUPPURATION OF THE ANTRUM; RECOVERY WITHOUT OPERATION.

DR. D. BRYSON DELAVAN reported a case of suppurating disease of the antrum, cured without operation. The patient, a young married lady, had come to him about two weeks ago, having for three weeks been troubled with the symptoms of this disease. By transillumination the diagnosis of suppuration of the antrum had been easily established. The maxillary opening was occluded by thickened tissue in its neighborhood, and at a certain hour every morning there was a muco-purulent discharge. The parts were cleansed by him on alternate days, the patient meanwhile using a cleansing wash, and taking a course of tonic treatment. To-day, by transillumination, the antrum was found entirely free from disease, the symptoms had entirely subsided, and the case was cured. He had seen a similar result in a young man of thirty-five, hence the importance of watching these recent cases and treating them with the hope of avoiding operation. The operation was simple enough, but the after-treatment was troublesome and very unpleasant.

A PECULIAR CARDIAC NEUROSIS.

DR. HENRY C. COE said that he had seen two peculiar cardiac cases within a week. The condition had been very alarming, but the good appearance of the patients had led him to give a favorable prognosis. The first was a curettage for an incomplete abortion, performed at night, the patient's temperature being 104° F., and the pulse 120. There was considerable hemorrhage after the operation. The pulse suddenly became very weak, although very little anesthetic had been taken. Notwithstanding this, the respiration was not much disturbed, and the patient's color was good. She responded quickly to the administration of nitroglycerin and strychnin. The other case was quite similar, except that her pulse remained weak and rapid for about eighteen hours. It was a woman who had been confined normally, but had been kept in bed for two weeks because of a history of having had phlebitis after a former confinement. Nothwithstanding this precaution, she developed phlebitis on getting up, and had been accordingly sent back to bed. Suddenly the pulse became very rapid and thready, but she said she felt well, and she certainly looked well. She did not respond satisfactorily to any of the usual stimulants—strychnin, nitroglycerin, and camphorated oil—but the next morning the pulse was 84, and has remained so since then. The patient was not hysterical, and there had been no previous attack of this kind.

DR. FRANK W. JACKSON said that these cases should be classified as essential tachycardia—a condition not very uncommon, yet about which we know very little.

TUBERCULAR MENINGITIS WITH PECULIAR FEATURES.

DR. C. A. HERTER reported the case of a patient who had had tuberculous joint disease, and who had been suddenly attacked with severe headache and vomiting. The same day he had become delirious and then comatose, and had had repeated convulsions. Death had occurred within three days after the onset of the headache. The autopsy showed a typical tuberculous meningitis. One interesting point was the extremely small amount of exudation. Another interesting feature was the existence of a solitary tubercle in the left lobe of the cerebellum, about three-fourths of an inch in diameter, which had caused no symptoms during life. He said that he had seen a solitary tubercle in about the same position in two or three other cases where there had been nothing pointing to a cerebellar condition.

DR. H. M. BIGGS said that he was reminded of a case of anthrax meningitis. There had been an infection at the wrist, from which the man had apparently recovered. He suddenly developed headache, delirium, and a temperature of 107° F., and death occurred in less than fifteen hours. The autopsy showed a very extensive sero-hemorrhagic exudation, and pure cultures of the anthrax bacillus were obtained from the brain. Cultures made from the skin, heart, and various other parts of the body were negative.

TRANSPOSITION OF THE ABDOMINAL VISCERA.

DR. FRANK W. JACKSON said that he had recently seen a German, forty-five years of age, who, for seven years, had had numerous attacks of vomiting of blood from the stomach, with an occasional discharge of bloody stools. Coincident with these attacks there had been extreme anemia. Physical examination showed no evidence of liver dulness on the right side. There was a fair area of dulness corresponding to the spleen. Considerably to the right of the median line, and extending to the vertebral column on the left, was a mass projecting some distance below the free border of the ribs, and upward to the fourth space. This man said that Nothnagel had diagnosticated his case as one of transposition of the viscera below the diaphragm.

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ORIGINAL ARTICLES.

THE ORTHOPEDIC TREATMENT OF SPASTIC PARALYSIS IN CHILDREN.[1]

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A CLASS of cases which sooner or later require orthopedic measures for the relief of deformity, have been variously called spastic paralysis, Erb's paralysis, paralysis with rigid muscles (Adams), pseudotetanoid paraplegia (Seguin), etc., etc. It will not be within the province of this short paper to enter into the pathology of this affection, which belongs to and has been studied by the neurologist. Its object will rather be to evoke a discussion as to its treatment from the standpoint of the orthopedic surgeon, as in some of the mooted questions, there is still a wide difference of opinion. Clinically, these cases present themselves to the orthopedic surgeon at various epochs of the disease, and at these different times, the manifestations are such that the different conditions should be the basis for their appropriate treatment.

For clinical purposes these cases may be divided into three classes: (1) Those where the mentality is practically nil (idiots); (2) those where the mentality is diminished; (3) those where the mentality is normal or only slightly interfered with.

The characteristic deformity of spastic paralysis is due to a contraction non-permanent in character, and where the element of irritability is always present in a greater or less degree. This irritability is manifested by the increased reflexes, and by the incoordination of muscular movement, resulting in the different deformities. All who are familiar with these cases, and have had the opportunity to observe them for an extended period of time, have seen at various stages of the disease a variation both in the character and location of the deformities produced. Hence it is that treatment should naturally differ, according to the time at which a case presents itself to the orthopedic surgeon.

The treatment may be classified as (1) general, (2) mechanical, and (3) operative.

The general treatment, in addition to the limited medicinal agents at our convenience, is comprised in the employment of mental training, electricity, and massage. The former, while necessary and important during the whole course of the disease, is one which belongs to the province of neurology, and need not be elaborated in detail here. Its best results are shown in cases where it has been continued systematically in schools for feeble-minded children, and under competent direction. Theoretically, the application of any remedy which would increase peripheral irritation, would certainly be contraindicated in an affection whose chief characteristic is one of exalted reflexes. Thus faradism, which has been extolled, or any interrupted current, should not be used. Personally, I have never seen any advantage from the use of electricity in any form, but if used it certainly should be for its "sedative" qualities, in the form of a constant or stable current.

Massage, in the ordinary sense of the term, except as a means of keeping the muscles in good general condition, has, as a remedial measure for the relief of deformity, no especial value in this class of cases.

Purely orthopedic measures are represented by a consideration of the mechanical and operative methods, and a discussion of these will be the object of this paper. The mechanical devices are embraced under those whose object is either improvement in locomotion or cure of the deformities.

It is the common experience of the orthopedic surgeon to have children afflicted with spastic paralysis brought to him with the request that some apparatus be applied to improve locomotion. It is in this connection that the clinical division which I have separated into three types becomes important as a basis, both for selection of apparatus and for operative measures. Thus it would be manifestly absurd, where incoordination and spasm were extreme, as occurs in the idiotic class, to burden them further with apparatus which they neither have the will-power nor proper muscular strength to support. The proper use of apparatus in these cases is only applicable to those where mentality is slightly or not appreciably affected. Here we can by apparatus prevent the increase of deformity by judicious use of supraincumbent weight and the approximation of the deformed parts to their normal position. I have deemed it unnecessary to enter here into an extensive description of the symptoms of spastic paralysis. All of you are familiar with the "scissors gait," the characteristic "Equino varus," and the various spastic contractions which produce the different deformities of both upper and lower extremities, interfering with proper use of both. Contractions of the upper muscular part of the body are rare, as compared with those of the lower. The greatest number of cases are comprised in the two classes, adducted thighs and elevated, inverted feet. Where both of these conditions are present it will be seen that no apparatus can in itself be efficacious for purposes of locomotion. Another object, however, is always to be borne in mind in the use of apparatus, and that is the maintenance of the normal position of parts. It is easy enough to obtain good position in these cases, but it requires unusual care and supervision to maintain it. No apparatus should be applied, in my opinion, where this skilled supervision is lacking, and also a definite knowledge on the part of those having the home care of the case as to the object of the apparatus. In the comparatively rare cases of this affection, where only single muscular groups are involved, as in unilateral, or even bilateral, clubfoot, more can be accomplished by apparatus, both as regards locomotion and cure. Here it is, however, that the question of the time when these cases are seen becomes important. As before stated, the deformities produced by spastic paralysis differ in character at various epochs of the malady. Thus it has been observed that many of these cases showing almost complete helplessness in infancy have attained to a condition later in life where comparative activity was present. In most all of the cases, except the completely idiotic, there is a progressive tendency toward improvement in walking. Clinical observation shows that as the cases approach adolescence the "irritability" lessens and the contractions assume a more fixed type. The best use of apparatus is obtained as the spasticity approximates the minimum. It is not the object of this paper to extol any special apparatus, but it is hoped sufficient has been stated as to the indications for the employment of such mechanical procedures as will enable the surgeon to ameliorate the distressing deformities of the disease.

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[1] Read before the Orthopedic Section of the New York Academy of Medicine, February 19, 1897.

Before dismissing the subject of the mechanical treatment, it would be well to speak of the question of stretching of muscles affected by spastic paralysis. This may be done either by manual exercise, applied to the different deformities, or by the use of, in the clubfeet, mechanical appliances. Here, again, it is possible by these means to maintain the parts in good position and prevent further progress of distortion, and as an adjuvant, there can be no question as to the utility of this procedure.

A consideration of the operative treatment will include tenotomy, myotomy, and also the questions of circumcision and cerebral surgery. Very little will be said of the latter procedure, as besides Bradford's and Morton's cases, we have as yet no data sufficient to uphold it in the surgical treatment of these cases.

Tenotomy and myotomy are recognized measures for the relief or cure of the deformities of spastic paralysis. The former, however, is the one most frequently used, and will occupy our attention.

There can now, in the light of clinical experience, be no question as to the utility of tenotomy, open or subcutaneous, in properly selected cases. I use the term "properly selected cases" advisedly, as I believe that many of the indiscriminate tenotomies done for the deformities of spastic paralysis are ill advised and unbeneficial. The antagonism of many neurologists on theoretical grounds is probably due to the results seen, in many of these cases, where the operation was performed irrespective of the conditions present or the after-treatment. Again, I believe that the irritability, general and local, should, in connection with the time, be a guide for the performance of the operation. Thus, the greater the irritability, or in other words, the greater the spasm, the less favorable is the result apt to be. If we are in position to so place the parts deformed, where we can control the deformity, it would seem rational to delay the performance of tenotomy until such time as the spasm approximates the minimum, and where the deformity becomes more fixed in character. In a large service, some years ago at Randall's Island Hospital, where there was a separate building for idiots, spastic cases were common. I operated in many of these cases, and although the after-treatment was in most of them carefully carried out, my success was not in accord with what I had been led to believe by the writings of Rupprecht and others. He it is who is responsible for the statement, that many of these cases after tenotomy, not only showed cure of the deformities, but also great improvement in the mental condition. I have not been able to satisfy myself as to the truth of the latter proposition. It is quite natural to believe, however, that many of these cases, by their being brought into contact with new things, by being better able to use their muscular sense, by seeing, touching, and walking, should apparently evince a better mental status.

The danger of relapse after tenotomy is, I think, much greater in this class of cases than in either the congenital or acquired clubfoot. We are here dealing with a "constant current of spasm" so to speak, which by operation is only checked for the time being, unless the after-care is very thorough and complete. If this is not carried out many of these cases will be in a worse condition than before operative measures were resorted to. Thus, while I am in favor of tenotomy as a means toward the rectification of the deformities of spastic paralysis, I would again call attention to the question of time and amount of irritability as guides to the proper selection of cases for the performance of either tenotomy or myotomy.

I shall not speak of circumcision except as a means, in a certain number of cases of this affection, of removing reflex disturbance of the nervous system. Dr. Sayre, whose name is connected with this operation in cases of spastic paraplegia, uses it in this sense, and not as a cure for deformities the result of either organic, brain, or spinal lesions. Many of these cases are undoubtedly benefited in a general way by the removal of any reflex disturbance which tends to keep up the general condition of spasm.

In conclusion, I hope these remarks, which are based on purely clinical grounds, will be of service in establishing some landmarks in the question of the relief of one of the most distressing class of cases with which the orthopedic surgeon has to deal.

THE PHYSIOLOGICAL ACTION AND THERAPEUTIC USES OF YEAST NUCLEINIC ACID, WITH SPECIAL REFERENCE TO ITS EMPLOYMENT IN TUBERCULOSIS.

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(Concluded from page 366.)

CASE LIII.—Mr. G., aged thirty-two, of Detroit, was examined July 5, 1895. There was no family history of tuberculosis. Both parents were then living, and his two brothers were healthy, active business men. The patient has been for some years given to the abuse of alcoholic drinks. Within the preceding twelve months his weight has fallen from 170 to 120 pounds. Examination showed extensive involvement of the lungs and larynx. Both apices were retracted. There was a large cavity on the left side under the third interspace. Crepitant râles were heard over the upper half of the right lung. Moist râles were heard posteriorly both above and between the scapulæ. The expectoration was abundant, purulent, and full of bacilli. Considering the condition of his lungs, this is in some respects one of the most satisfactory cases which has come under my treatment. During the first two months I could not see the slightest evidence of improvement. Indeed, the disease steadily progressed. The afternoon temperature frequently went as high as 103° F, and the weight slowly diminished, but early in September, 1895, the appetite improved, the cough became much less continuous, the sputum lost its purulent character, and in several samples no bacilli could be found. This would be true sometimes when all the sputum raised in twenty-four hours was collected and examined. At other times a few bacilli could be found. This condition of the sputum continued as long as the patient was with me, which was until December 21, 1895. There was also marked improvement in the physical signs. The cavity remained, and there was bronchial breathing over both upper lobes, but there were no râles. Dr. McClintock has examined this patient (October, 1896), and reports that there has been further improvement, and that he is now using the nuclein again.

CASE LIV. — Miss B., aged twenty-seven, of Owosso, Mich., a stenographer, was examined July 9, 1895. Her father died at forty-five from some stomach trouble. Her mother is living, and apparently well, but earlier in life she had pulmonary hemorrhages. A sister of her mother and a brother and sister of her father died of consumption. Miss B. has been "out of health" for three or four years, but did not begin to cough until four months ago, when she had an attack of influenza. Since then she has been coughing and raising abundantly. She had heavy night sweats, and the menses have been suppressed for some months. There was at least one cavity in the left lung, and there was bronchial breathing over the upper lobe on the right side. The patient remained under treatment with me until about October 1, 1895, when she went to Talapoosa, Ga., where the nuclein injections were continued by a very intelligent physician. The result in this case conforms to the general rule for this class. There was temporary improvement, gain in weight of about ten pounds, restoration of the menses, diminished cough and expectoration, and then under the continued use of the nuclein, retrogression and gradual failure. She died in August, 1896.

CASE LV. — A. B., aged twenty-one, farmer, Hersey, Mich. One brother and one sister had died of consumption within the past five years. Patient was with both brother and sister during their illness. He had lost about twenty pounds during the last year. Right lung: Bronchial breathing throughout upper lobe; crepitant râles in the superior axillary region. Posteriorly a large cavity was detected above the scapula. There was bronchial respiration between the scapulæ. Left lung: Bronchial respiration over upper lobe; crepitant râles through the lower part of the lung and throughout the axillary area. Bubbling râles were heard posteriorly.

There was an ischiorectal abscess, which had been opened by his physician in March, 1895, and which at the time of my examination was discharging freely. This abscess was opened more freely and dressed with nuclein and iodoform, and healed completely within one month. This patient remained under treatment until October 1, 1895. His lungs showed some improvement in physical signs, and the weight increased four pounds. The temperature was not materially altered, that for 4 P.M. averaging 100° F. during the first and last weeks of treatment. When he went home, October 1, 1895, I gave him a prescription for capsules, containing one grain each of iodoform and sulfate of quinin and one-sixtieth of a grain of strychnin sulfate. I have been unable to obtain further information concerning this patient.

Case LVI.—Miss W., aged twenty-five, of Ann Arbor, was examined July 10, 1895. Her mother died five years ago of consumption. Miss W. was with her mother during the illness of the latter. Her mother had two sisters, both of whom died of consumption. Miss W. had not felt well since the death of her mother. She had lost ten pounds since June 1, 1895. She had been having night sweats for two months, and felt "flushed and hot" every afternoon. The cough was slight, and the sputum consisted of glairy mucus, containing a few tubercle bacilli. The only abnormality which could be found in the lungs consisted of crepitant râles in the right apex. The afternoon temperature ran from 99.5° to 100° F. The râles disappeared, and no germs could be found after three weeks of treatment. The injections were continued until October 1, 1895. The patient has shown no signs of disease since, and raises nothing.

Case LVII.—Mr. R., aged thirty-two, of Toledo, O., was examined July 10, 1895. He had no family history of tuberculosis, but there was sufficient evidence of direct exposure to the infection. A young man with tuberculosis had worked for many months in his office. This clerk had coughed and expectorated freely, and there had been no attempt to disinfect the sputum, and it was R.'s recollection that the clerk had expectorated on the floor. This was some five years before he came to me. He had known himself to be tuberculous for about two years, and had spent a part of one winter at Asheville, N. C. There were numerous small cavities in both upper lobes. The afternoon temperature went as high as 101° F. The treatment was continued until the middle of September, 1895, when he went to Utah for permanent residence. I have not heard from him since. There was a slight gain in weight during treatment, but no essential improvement in physical signs.

Case LVIII.—Charles M., aged seventeen, of Northfield, Mich., was examined August 13, 1895. There was no history of tuberculosis in the family, and no evidence of direct contagion. In March, 1895, he began to cough, and from that time to the date of examination he had lost fifteen pounds in weight. The amount of sputum raised daily averaged about two ounces. There were a few bacilli. Moist râles could be detected in the right subclavicular area. No other abnormality could be found. The average temperature for three days before beginning the treatment was at 8 A.M. 99°; at 12 M., 99.4°; at 4 P.M., 100°; and at 8 P.M., 98.6°. The treatment was continued until the middle of September, 1895. By this time the temperature had become constantly normal. The cough and expectoration had ceased, and he had gained ten pounds. He remains well, and has no cough.

Case LIX.—Miss L., aged twenty-eight, of Detroit, was first examined August 13, 1895. One sister had died of consumption at the age of twenty, eight years ago. Miss L. had been with this sister during her illness. She had been coughing for three years, and was in the last stages of the disease. There were numerous small cavities in both upper lobes. The afternoon temperature went as high as 102.5° F. The treatment was continued for eight weeks, and without effect on the progress of the disease. She died about three months later.

Case LX.—Mr. C., aged thirty-seven, of Amsterdam, N. Y., a druggist. There was no family history of tuberculosis and no evidence of direct contagion. Patient had influenza six years ago, and has been coughing and expectorating ever since. There were cavities in both upper lobes. Treatment was given for two months without benefit. He died the last of December, 1895. During the last week of his life there was involvement of the meninges.

Case LXI.—Mrs. C. of Amsterdam, N. Y., wife of the patient whose history has just been given. There was no family history of tuberculosis, but she undoubtedly acquired the disease from her husband. It may be remarked here that Mr. C. was exceedingly careless about expectorating about him wherever he happened to be. This was so noticeable and he was so persistent in the neglect of my admonitions so frequently given, that I once forbade his coming to my office. This caused him to heed my advice while in my office, but he continued to disregard all precautions elsewhere. Mrs. C. also had numerous small cavities. The treatment was given for about two months, but without any evidence of improvement. She died a few weeks after her husband.

Case LXII.—E. B., aged twenty-eight, of Saginaw, Mich., was examined August 14, 1895. The family history has already been given. One sister died, while tuberculous, in child-birth, and another sister was under treatment (Mrs. E., Case LXIV). This man had always considered himself especially healthy and robust. About six weeks before coming to me, he began coughing and spitting up blood. He had had three slight hemorrhages in that time, and had lost twelve pounds in weight. The only abnormality that could be detected consisted of a prolonged expiratory movement over the left apex and subclavicular area. The sputum contained numerous bacilli. He remained with me only three weeks and went home with the intention of having the treatment continued. October 23, 1895, he wrote me that he had gained eight pounds. He sent me some of the sputum at that time, and there were bacilli in it. November, 1896, he reports to me that he is quite well, weighing more than he ever did before, but I have not seen him.

Case LXIII.—Mrs. H., aged thirty-eight, of Toledo, Ohio, came for treatment August 18, 1895. She had been coughing and expectorating for two years, and had spent one winter at Colorado Springs. The expectoration was free, but contained very few bacilli. There was only bronchial breathing over the upper half of the left lung and over the right apex. She remained under treatment for two months, during the latter half of which she coughed and expectorated much less and no bacilli could be found, although frequent and careful examinations were made. I last examined the sputum in December, 1895, and at that time could find no bacilli.

Case LXIV.—Miss P., aged eighteen, of Grass Lake, Mich., had been seen by me in consultation early in July, 1895. She was in the last stages of the disease, very much emaciated, and with extensive cavities. There was no family history of the disease, except that a cousin had it, and this cousin had visited at her father's house. The treatment in this case was without effect, and the patient died in November, 1895.

Case LXV.—Miss M. S., aged twenty-one, of Ann Arbor, in the last stage of the disease had the treatment for three weeks without effect.

Case LXVI.—Miss E. S., aged twenty-nine, of Ann Arbor, came for examination August 29, 1895. There was no family history and no known direct contagion. The apex and subclavicular area of the left side showed crepitant râles. The sputum was small in amount but contained numerous bacilli. Miss S. is a farmer's daughter and lives about five miles from my office. She drove this distance every day, rain or shine, cold or hot, from the time of beginning the treatment until March 1, 1896. I attribute much of the good results secured in this case to that drive. The germs disappeared in December, 1895, and she has not coughed any since early in January, 1896. Physical examination fails to show any abnormality. The temperature never went above 100° F. and has been normal since December, 1895. I believe in the curative value of out-door life. This adjunct to treatment is especially applicable to those cases in which there is but little elevation of temperature.

Case LXVII.—Mr. W., aged twenty-eight, a paperhanger, of Ann Arbor, came for examination the last of August, 1895. There was no history of the disease in his family, and no evidence of direct contagion. He came on account of a hemorrhage, having supposed himself well except that he had lost about fifteen pounds in weight during the preceding year. The bloody sputum contained numerous tubercle bacilli. The left lung showed in its upper portion moist râles. The afternoon temperature was 100° F. After four weeks of treatment the râles disappeared and there has been no cough since. He took the injections daily for nearly six months. He now weighs more than he ever did before, and has not lost more than one month from his work during the whole time.

Case LXVIII.—Mrs. W., aged twenty-eight, of Grand Rapids, Mich., was examined early in September, 1895. There was no history of the disease in her family, and none of direct contagion. There was bronchial breathing over both upper lobes. Treatment was given for six weeks, during which time the patient gained a few pounds in weight and the night sweats, which had been profuse, ceased. She then went to Colorado, and I have known nothing of her since.

Case LXIX.—Miss R., of Goshen, Ind., was examined late in September, 1895. She had numerous small cavities, profuse night sweats, and high afternoon temperature. The treatment did not retard the progress of the disease.

Case LXX.—Mr. J., aged twenty-seven, an instructor in the University, came under treatment early in October, 1895. There was no history of the disease in his family. He had worked in the same room with a consumptive two years before. There was bronchial breathing over the upper half of both lungs. The afternoon temperature averaged 100° F. The treatment was continued until the middle of February, 1896, at which time he went west for permanent residence. There was some improvement during the treatment, as shown by gain in weight and decrease in temperature. However, the bacilli remained in the sputum and the physical signs were not materially altered. November, 1896. He has steadily declined in health since going to Colorado.

Case LXXI.—Miss S., aged eighteen, of Bay City, Mich., October 13, 1895. There are certain points in this case which justify some detail. Miss S. had studied very continuously in the Bay City High School, the very moderate means of her parents having rendered it necessary that her studies should be pursued under certain disadvantages. During the last year of her high school course she lost flesh and suffered from a sensation of general weariness from which she constantly strove to relieve herself by working all the harder, and the stimulation of work actually gave her temporary relief. In October, 1895, she entered the University and soon thereafter consulted me concerning the feeling of lassitude. Nothing had called her attention to her lungs. She had observed that she felt a shortness of breath, even when walking at an ordinary gait, and much more plainly on ascending stairs, but she had supposed that this was due to a weak heart.

There was bronchial breathing over both upper lobes and both apices were retracted. There had never been any cough. The extent of lung involvement was certainly unusually great considering the entire absence of cough. The physical examination left no possible doubt in my mind as to the nature of the trouble and subsequent developments confirmed the testimony of the physical signs. The patient was put on creosote, and the administration of nuclein was not begun until later. In November, she had a slight hemorrhage and the blood raised at the time was carefully examined, but with negative results. The cough accompanying the hemorrhage soon ceased. I had requested the patient to keep a wide-mouthed bottle in her room and to bring me anything and everything she should cough up. Several times she brought me samples of saliva and mucus from the throat and nares. Early in January, 1896, I found the bacilli for the first time; then the nuclein was given. However, the lungs rapidly broke down. She was carried to Colorado in February and died there about three weeks later. This case illustrates in an unusual manner how extensively the lungs may be involved in tubercular processes before the bacillus appears in the sputum, and indeed before there is any sputum.

Case LXXII.—Mr. M., of Grass Lake, Mich., principal of the high school, was examined November 21, 1895. He had considered himself well until about three weeks before this examination, when he began to cough and raise. There was no physical sign except prolonged expiration accompanied by feeble moist râles over the left apex and subjacent area. The sputum was small in amount, but contained numerous bacilli. He remained under treatment for about four weeks, when on having an opportunity to accept a position in New Mexico, he went there. He improved slightly in weight during the treatment. There was no family history of tuberculosis; but he and his wife had during the summer of 1895 occupied the house of Mr. P., father of Case LXIII. Of course he might have been infected much earlier than this. However, I think this coincidence of sufficient importance to be recorded.

Case LXXIII.—C. M., aged twenty-five, of Pinkonning, Mich., a fireman on a locomotive. There was no family history of tuberculosis and no known direct exposure to contagion. In December, 1893, he fell on a switch-stand, bruising the abdomen and injuring one testicle, which has gradually decreased in size until it is not more than one-third as large as the other one. The injury to the abdomen caused a dull pain, which continued for some months. This pain grew so severe in February, 1894, that he summoned a physician and was in bed for one week. The physician said that he had inflammation of the bowels. Some six months later he began to cough. He had been under the charge of a physician for three months before coming to me. He had suffered during this time from a persistent diarrhea. Had profuse night-sweats, and was raising abundantly. It seemed to me that the disease had extended from the abdominal cavity upward. Both lower lobes were involved and there was a pleuritic effusion on the left lung. The afternoon temperature went as high as 103° F. This man had the nuclein injections for three weeks, during which time there was some improvement in the diarrhea, but none in the lungs. He was anxious to go west, the railroad company offered him transportation, and as I did not believe that his condition would be materially benefited by the nuclein treatment, I consented. He went to Arizona and I have heard nothing further from him. I should be much surprised if the change in climate has done him good.

Case LXXIV.—C. T., aged twenty-three, a student from Lansing, Mich. His father's half-brother had died of consumption eight months before, after a long illness in his father's house. T. had always been frail. He began to cough and raise some one year ago. Since October 1, 1895, the amount of sputum had greatly increased. His hands and feet grow cold every afternoon. There was roughened breathing over the whole of left upper lobe and some dulness over the right side. The first examination failed to reveal any bacilli, but subsequently a few were found. The injections were given for four weeks, when the cough ceased, the fever disappeared, and six pounds in weight was gained. The only evidence of any trouble in the lungs on his discontinuance of the treatment was a prolonged expiratory murmur on the left side. November, 1896, he writes that he is perfectly well.

Case LXXV.—Mrs. C., aged twenty-nine, of Seattle, Wash. There was no family history of the disease and no known exposure. She had left Seattle in September, 1895, and gone to her father's at Towanda, Pa., where she had been under the treatment of Dr. C. M. Pratt, who wrote me as follows: "Mrs. C. has been under my care for the past month for symptoms of incipient phthisis, cough, rapid pulse, night-sweats, delayed menstruation, etc. She is now somewhat better, weight increased, cough less, night-sweats better, and she has menstruated. Her treatment has been creosote, phosphate of iron, and one-sixtieth of a grain of picrotoxin for night-sweats." I found bronchial breathing over the upper part of the left lung. The quantity of sputum was small and bacilli few. Her weight was 116 pounds. She had the nuclein injections for nearly three months, before which time her cough had ceased altogether and no abnormality could be detected in the lungs. Under date of August 16, 1896, she wrote me from Sidney, Wash., that she weighed 133 pounds and had never felt so strong and well. She has not been troubled with colds and has no cough.

Case LXXVI.—Mr. H., aged twenty-four, of Decatur, Ill., came to me in August, 1895. It will be seen that this case is reported out of chronological order. This is done because it was not a case of pulmonary tuberculosis. The disease was located in the bladder. He had been troubled about three months before consulting me with frequent and painful micturition. He had been sounded for stone with negative results. Examination of the bloody urine showed the presence of numerous pin-head lumps, which, on being crushed between cover glasses and stained, revealed great numbers of tubercle bacilli. Guinea-pigs inoculated with the urinary sediment developed tuberculosis. The treatment was begun by me and continued by Dr. Barnes of Decatur. Early in September, 1895, he began his work as teacher in the Decatur High School. At that time his afternoon temperature frequently rose as high as 103° F. Before December, 1895, the urine had become normal, and had so remained. There is now no evidence of the existence of any disease.

Summary.—The cases reported in this and the preceding paper include all those in which the tubercle bacillus was found, treated by me with yeast nucleinic acid, from May, 1893, to December, 1895. There has been no selection of cases to report, and no exclusion. Many were in the last stages of the disease when the treatment was begun. Indeed, some of them were at that time confined to their rooms, and died within a few weeks. In my study of the value of yeast nucleinic acid in the treatment of tuberculosis, I have endeavored to carry out the investigation as I would a series of laboratory experiments and, above all, not to deceive myself. Of the seventy-six cases reported, seventy are those of pulmonary tuberculosis. Of these, thirty ($42\frac{6}{7}$ per cent.) have died. Of these, at least nine were temporarily benefited.

Of the seventy, seventeen ($24\frac{2}{7}$ per cent.) have been continuously free from the bacillus for from one month to two and one-half years, so far as can be determined from the sputum; *i.e.*, either there has been during this time no sputum to examine or that examined has failed to reveal the bacillus. To the best of my knowledge, another (No. 47) has been free from the bacillus for more than a year, and another (No. 29) has been free from the bacillus with the exception of a short time, and still another (No. 24) was free when last examined. Twenty ($28\frac{4}{7}$ per cent.) were still infected at the last examination. Of these, sixteen have been apparently improved by the treatment. It should be stated that none of these were hospital cases. I was not able to control their diet. Most of them were not rich, and had only inexpensive food. The hygienic conditions under which many of them have lived have not been satisfactory.

Of the five cases of urinary tuberculosis, four have apparently been cured. One was temporarily benefited, but developed acute miliary tuberculosis and died. The one case of joint tuberculosis has been benefited.

Since the first of January, 1896, I have treated between thirty and forty additional cases of pulmonary tuberculosis with nuclein, but since most of these have been given the five and the ten-per-cent. solutions of nucleinic acid by the mouth, some with and some without hypodermic injections of the one-per-cent. solution, and since sufficient time has not elapsed to draw positive conclusions concerning the value of this method of administration, I will defer further details until another time. Moreover, to report additional cases would require that this paper be lengthened beyond all proper limits.

I have treated several cases which I believed to be tuberculous, but the bacilli could not be found. These are not included in the list already given, and I will now proceed to detail two which seem to me of special interest:

In May, 1895, I was called to Battle Creek, Mich., where I saw, in consultation with Dr. Alvord, a Mr. D. His mother's family had furnished several consumptives, and a brother had had one leg amputated by Dr. John B. Hamilton of Chicago on account of tuberculosis of the knee-joint. The patient, who was unmarried and twenty-eight years old, had been failing in health for the past six months, latterly very rapidly. February 1, 1895, he weighed 136 pounds; at the time of my visit eighty-two pounds. He had an exhaustive mucus diarrhea, with night-sweats, and the temperature curve of tuberculosis. The lungs were normal and the heart very weak, but without organic disease. The abdomen was retracted, and no enlarged glands could be found. A few weeks before my visit Dr. Alvord had operated upon him for fistula in ano. The wound was still discharging. I examined the stools and the pus from the wound for tubercle bacilli, but with a negative result. I advised that the bowels be irrigated two or three times a day with large volumes of water, and that after each irrigation two drams of the one-per-cent. solution of yeast nucleinic acid with fifteen drops of laudanum be injected. Teaspoonful doses of the nucleinic-acid solution were also given by the mouth three times a day. From the time of my visit until September 1, 1895, about one gallon of the nuclein solution was used, and the patient gradually improved. By September, 1895, he was able to walk out, and in January, 1896, he resumed his work. He has continued well. His present (November, 1896,) weight is 130 pounds. He eats without discrimination, has daily normal movements, and attends to his duties as proprietor of a dry-goods house.

Miss S., of Port Huron, Mich., aged eighteen, came to me by the advice of Dr. Wilson of that place, April 4, 1895. Father and mother are both living and well. In short, the only consumptive in the family is a cousin, with whom the young lady has occasionally visited. Her weight had fallen from 129 pounds to 105 pounds within six weeks. Night-sweats were profuse and exhausting. The following letter from Dr. Wilson forms the best statement of the history of the case:

> Port Huron, April 9, 1895.
>
> Dear Doctor:—I had intended to send with the patient a statement of the origin and progress of the lung involvement, but I misunderstood the time fixed for the departure and was too late.
>
> I think it was February 18th, that her mother brought Miss S. to me. She was very anemic, weak, and feverish. I made no examination of the lungs at that time, but did four days later. I was again struck with the great anemia. The exertion of walking across the room would cause very rapid pulse and breathlessness. I found the upper part of the left lung involved. About two weeks after this, Dr. Stewart, on my invitation, examined the lung, and found a small area of dulness about the line of junction of the upper and middle lobes of the right lung. On examination I confirmed this discovery. The dulness spread up and down and in all directions from this focus, and within two weeks involved the whole of the right lung. I watched its progress closely, and know this to be a fact. The afternoon temperature soon reached 100° F., then ran up to 102°, to 103°, and sometimes to 104° F. At times I doubted my diagnosis of tubercular infection, as the cause of the dulness, but could find no other solution for it. At the time she left, the dulness was not quite so marked in the right apex as it had been. There was very little cough, for the amount of lung involved, and she had certainly gained in strength, but had lost in weight. Her appetite had also improved, and there was a morning remission in the fever, which before had been continuous. I had the nuclein and thought of using it, but concluded that it promised nothing in a case of such acute nature, so I prescribed tonics and remedies

to meet symptoms as far as possible, I will be glad to hear from you concerning her. Yours,

MORTIMER WILSON.

Menstruation had not appeared for three months past. The mother told me at the time of examination that the patient had been failing in health noticeably since early in December, 1894. My notes taken at the examination read: "Upper lobe of right lung partially consolidated and numerous râles heard throughout upper lobe of left lung. There is a distressing cough, but the patient has never raised anything." The temperature the day before beginning the treatment was as follows: 8 A.M., 98.5°; 1 P.M., 101°; 4 P.M., 103°; 8 P.M., 102$\frac{3}{5}$° F.

The treatment was begun April 5th with 40 minims, which was doubled the next day, and kept at 80 minims during the course of the treatment. The temperature gradually fell as is shown by the following: May 8, 8 A.M., 98.5°; 12 M., 100$\frac{4}{5}$°; 4 P.M., 101$\frac{4}{5}$°; 8 P.M., 100$\frac{3}{5}$° F. By the middle of June the temperature remained normal, and there has been no fever since that time. When I state that the temperature gradually declined I would not have it understood that there were no exceptional days. In the latter part of April the temperature for some days ran high at 4 P.M., and once reached 104° F. The treatment was discontinued the last of June, and there has been no occasion to resume it since. At that time the lungs were quite normal and the cough and night-sweats had ceased. In October, 1895, Miss S. wrote me that she weighed 130 pounds and was quite well. In March, 1896, I saw her and she was apparently in the best of health. I did not examine her lungs.

I have reached certain positive and definite conclusions concerning the value of the one-per-cent. solution of yeast nucleinic acid in tuberculosis administered daily in doses of from 60 to 80 minims hypodermically, and these conclusions I will now give:

1. In advanced stages of the disease, in which the area of involvement is great, with or without cavities, the best that can be expected from this treatment is temporary improvement. Even this does not occur in all cases.

2. In inital cases, when the area of infection is limited, this treatment may and often does, not only arrest the progress of the disease, but it acts as a curative agent.

If these conclusions be correct, it follows that in order to save our tuberculous patients by the employment of this treatment, we must recognize the disease in its incipiency. How can we best do this? That the presence of the bacillus tuberculosis in the sputum is a positive and conclusive proof of the existence of pulmonary tuberculosis, I assume that no one will deny. If the sputum were examined for the bacillus in every case in which there is any sputum, and as soon as there is any, thousands of cases of tuberculosis would be recognized in time for therapeutic measures to be effective. I employ the word "sputum" here as I think it is generally understood by the profession, and not as it is defined in our medical dictionaries, nor do I use it in strict accord with its etymology. I mean to designate by the word "sputum" any secretion which has its origin in the air passages below the epiglottis, and which is ejected from the mouth. It will be seen that according to this definition saliva is not sputum, though the latter may be mixed with the former. With this definition, I say that in any instance in which the patient raises any sputum, an examination for tubercle bacilli should be made. Neither the robust appearance of the patient nor his previous excellent health, nor his family history, possibly free from any taint of tuberculosis, should cause the physician to neglect this examination. As a profession, we have been so long, so forcibly, and so painfully impressed with the old, classical picture of this disease, when it was known only in its last stages, that even now we too often fail to recognize it in the distance from failure to employ the aids to our vision with which science has recently equipped us. It is my belief that, so far as tuberculosis is concerned, our profession is to-day in greater need of skill among its members in the early recognition of the disease than it is of therapeutical agents with which to combat it.

While the careful examination of the sputum would be of great service in the early recognition of tuberculosis, I believe that in many cases the diagnosis of this disease may be and should be made before there is any sputum to examine. I will illustrate this point by the history of the following case, which I have just examined, and which might be duplicated almost any day in the practice of one giving special attention to this disease:

Miss G., aged twenty-six, a saleswoman in a dry-goods store. Her mother died, twenty years ago, of consumption. One sister died twelve years ago of the same disease. The family has lived during all this time in the same house. During the summer of 1894, Miss G. weighed 130 pounds, and was apparently a robust, vigorous woman. In August, 1895, she weighed 118 pounds, and consulted a physician for the first time in her life. She complained of great and constant weariness, loss of appetite and chilly sensations, followed by slight fever, every afternoon. The physician to whom she went in August, 1895, has treated her from that time until now for malaria and "liver trouble." In March, 1896, she had the *grippe*, and began to cough, for the first time in her life. She has been coughing ever since. Now she weighs 104 pounds, has profuse night-sweats, coughs almost constantly, and there is not a normal respiratory sound to be heard in any portion of her lungs.

Now, I wish to ask, When should the treatment for tuberculosis have been begun in this case? Did the *grippe* of March, 1896, develop the tuberculosis? What caused the loss in flesh so plainly recognized in August, 1895? What caused the daily chilly sensations and the afternoon fever at that time? Are not the chances ten to one—yes, one hundred to one—that she was tuberculous then? Are we to wait until the bacillus grows vigorously and lung tissue begins to break down before we even suspect the existence of a disease so frequently present that it destroys one-seventh of the race? Does the surgeon wait until the inflammed appendix ruptures and every doubt of the nature of the trouble is removed by the collapse of the patient before he operates? If he did this, would the operation statistics for appendicitis be as favorable as they now are? I have no doubt that a healthy appendix is sometimes found by the operator, and it might happen, did we not wait for the appearance of the bacillus, that some non-tuberculous person would be treated for that disease, but the operation, skilfully done, does not kill, nor would the treatment for tuberculosis do harm. In many cases tuberculosis can be recognized before the bacillus appears in the sputum, with as much certainty as appendicitis can be diagnosed before rupture occurs.

Have we not a well-known method for the recognition of malaria when it has a real existence? Have we not in quinin, the one specific known to scientific medicine, a test for malaria? We have these, but we do not take the trouble to examine a drop of blood from the finger for the plasmodium, and although quinin fails to prevent the daily return of the afternoon "flush," we excuse our neglect, console our patients, and give the bacillus tuberculosis ample time to destroy the lungs, while we fire our quinin pills and capsules at a phantom.[1]

The physician who desires to recognize tuberculosis in its earliest stages must take into consideration all the known signs and symptoms of the disease. In one instance the bacillus may appear in the sputum early, in another late, and in a third not at all. In our reliance on the detection of the bacillus, we must not neglect the evidence which we may gain by auscultation, by percussion, by carefully watching the temperature, etc. I will put in condensed form my ideas concerning the means which should be employed in the early recognition of tuberculosis:

1. Whenever there is any sputum it should be examined for tubercle bacilli. If the bacilli are not found in the first examination the search for them is to be repeated. When the bacilli are present the diagnosis of tuberculosis is positive. Failures to find bacilli, even after repeated examinations, does not prove the absence of tuberculosis. The complete absence of cough and of sputum is not proof of the non-existence of tuberculosis.

2. Apical catarrh, even when no bacilli are found in the sputum, is in the great majority of instances due to tuberculosis. Leube is certainly right when he says: "Marked dulness of the percussion note over the apex is always ('fast immer') a symptom of pulmonary tuberculosis, especially when the dulness is unilateral, and is detectable also in the infra-clavicular fossa or in the regio supraspinata. . . . Still more certain is the diagnosis when the dulness on percussion is accompanied by auscultatory variations from the normal. The slightest variations in the respiratory sounds suffice here, such as jerky breathing, prolonged expiration, feeble or intensified, or rough vesicular breathing, and indefinite respiratory sounds. If the breathing be of bronchial character, or if there be râles, even when these are isolated, the slightest percussion dulness in the apex becomes of great diagnostic significance."

Among the very earliest variations in respiratory sounds in tuberculosis is a prolonged expiratory movement. When this is accompanied by retraction of the apex and dulness on percussion, there can be but little doubt about the diagnosis. This prolongation of the expiratory sounds is so easily and so certainly recognized and its diagnostic value is so great that I wish to emphasize this mention of it.

There is a tendency among medical men at present to pronounce no disease of the lung tuberculous unless the bacillus is found in the sputum. I had myself fallen for awhile into this error. Such cases as the following lead me to believe that this is an error:

P., now aged fifty-six, had consulted me occasionally for years. As early as 1893 he began to lose weight and to complain of weariness upon slight exertion. This decrease in weight has slowly continued. During the winter of 1894–95, he had frequent and persistent colds, during which he coughed up mucus. There was at that time only a prolonged expiratory sound over the right apex and subclavicular region. The sputum was examined during these colds, but always with negative results. In the fall of 1895, he returned from his vacation with a well marked apical catarrh on the right side. The sputum was examined repeatedly during the following winter, but again negatively. On account of the failure to find the bacilli, the nuclein was not employed. In September, 1896, he returned from a three-months' vacation with a cavity under the clavicle on the right side, with the left upper lobe involved and his sputum laden with bacilli.

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[1] It is an interesting fact that malaria was once regarded as antagonistic to tuberculosis. This view was especially championed by Buffalini and other Italians, and this supposed antagonism was cleverly used hy Brehmer in explaining his theories. See "Die Gesetze und die Heilbarkeit der Chronischen Tuberculose der Lunge," Berlin, 1856.

3. I will again quote from Leube as follows: "It has recently become more and more certain that the apparently spontaneous pulmonary hemorrhages which occur in those supposedly well are not causes of tuberculosis, but are the results of a disease already established." The teaching of Niemeyer[1] that pulmonary hemorrhage is a cause of tuberculosis was founded upon erroneous ideas of both the etiology and pathology of the disease and should have been discarded years ago. I have already called attention to the desirability of examining the blood for tubercle bacilli in every case of pulmonary hemorrhage. The germs will not always be found, even when the hemorrhage is of tubercular origin, as it is in the great majority of instances, but when they are found there can be no longer any doubt about the nature of the lesion. I have seen so many cases in which the golden opportunity for beginning proper treatment, medicinal or climatic, has been indicated by hemorrhage, the warning has been disregarded, and the disease has next manifested itself in a grave form, that I desire to briefly report one such case:

A young lady of eighteen had in February, 1895, a slight hemorrhage and continued for some days to cough up blood. A physician pronounced it vicarious menstruation, finding some reason for this in the fact that the monthly flow had been somewhat scanty. The young lady began to cough late in the spring of 1896, and an examination of the lungs in July of this year showed dulness over both upper lobes, bronchial breathing with bubbling râles, a small cavity in the left subclavicular area, and an extensive pleuritic effusion over the lower half of the right lung. The sputum contained innumerable pinhead tubercles, and these crushed between cover glasses and stained were found to be full of bacilli.

Now, can any one with the subsequent history known doubt that this patient was tuberculous in February, 1895? With instances of this kind coming under professional observation constantly it does seem that we should interpret the significance of early hemorrhage more correctly.

The studies of Rindfleisch have made us acquainted with the pathology of hemorrhage in initial tuberculosis. The tubercular process extends into the wall of the artery destroying the media and at times the intima, thus forming a spot where the rupture occurs. Fortunately this usually happens in one of the very small end arteries, and the hemorrhage is consequently slight. According to Rühle, late hemorrhages are of somewhat different origin and are more likely to be serious. Here the arteries in the walls of cavities, being left unsupported by the destruction of the adjacent tissue form aneurismal sacs which break.

There is considerable difference of opinion among the authorities concerning the effects of hemorrhages in pulmonary tuberculosis upon the temperature. According to Wunderlich,[1] Lebert,[2] and Schwarz,[3] even slight hemorrhages in any and all stages of the disease are followed by at least a temporary depression of temperature. While Niemeyer[4] and Uhrig[5] state that hemoptosis is usually followed by an elevation of temperature, and Simonsohn,[6] that there is no uniformity in the effects, I wish to state in this connection that when a supposedly healthy person has come to me on account of pulmonary hemorrhage I have always found at some time of the day, usually in the afternoon, an elevation of temperature. Of course I cannot say whether these persons were febrile before the hemorrhage or not.

4. It is stated by good authorities that some cases of pulmonary tuberculosis run their entire course without any elevation of temperature. I have never seen such a case. I fail to find any such case reported in sufficient detail to justify me in believing the statement to be true. When the temperature is taken only morning and evening, the record may show no elevation; especially is this likely to be true when the evening record is made late. However, this is not the correct method of taking the temperature in this disease. The maximum temperature is, in the great majority of instances, in the afternoon, and not in the evening. My experience leads me to believe that the temperature curve of tuberculosis is as characteristic as that of typhoid fever; and, indeed, there are fewer variations than in typhoid. While there are exceptions and while exercise often markedly alters the temperature of a given hour, the rule holds that the maximum is between three and six P.M. The record should always be made at eight A.M., twelve M., four P.M., and eight P.M. When this is done the maximum will, in the majority of instances, when averaged for a week, be at four P.M.

In acute miliary tuberculosis the temperature curve is very irregular and my observation confirms the statement of Rühle[7] who says: "The irregularity of the fever curve of miliary tuberculosis is of importance in distinguishing it from other febrile diseases from which it otherwise might be confounded."

It would seem to be superfluous to say that but little reliance can be placed on the patient's statement that there is no fever. However, I have this day received a letter in which a physician writes substantially as follows: "Mrs. A. has been tuberculous for two years. She states that she has been free from fever, but I find that since I began the nuclein her afternoon temperature sometimes goes as high as 101° F." In all cases it is well to have a temperature record for a week before treatment is begun.

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[1] "Klinische Vorträge über die Lugenschwindsucht," 1869.

[1] "Eigenwärme in Krankheiten."
[2] "Veranderungen der Korperwarme im Laufe der Tuberculosis."
[3] "Ueber den Fieberverlauf bei Phthisis pulmonalis."
[4] "Klinische Vortrage über die Lungenschwindsucht."
[5] "Welchen Einfluss hat das Blutspeien auf die Temperatur bei Phthisis," 1885.
[6] "Hat das Haemoptoe einen charakteristischen Einfluss auf die Temperatur," 1887.
[7] "Die Lungenschwindsucht und die Acute Miliartuberkulose." Ziemssen's *Handbuch*.

Burkhardt, working under Strumpell, has written a monograph on the temperature in tuberculosis.[1] This monograph is a good illustration of the careless mannner in which the temperature in tuberculosis has been studied even in some of the most renowned clinics. Burkhardt makes five classes of temperature curves in tuberculosis:

(1) Afebrile, both in the beginning and during the course of the disease. (2) Subfebrile: "In a large number of cases the morning temperature is (zwar) normal, while the evening temperature shows a slight elevation (from 38° to 38.5° C.)." (3) Hectic fever: "The morning temperature is normal, while the evening temperature goes to 39° or 39.5° C." (4) Continued fever (Volliges Verschwinden normaler Eigenwärme). (5) Irregular temperature (Grosse Unregelmässigkeit des Wärmeganges).

5. Loss of weight is practically a constant and frequently an early accompaniment of tuberculosis. However, before any significance can be attached to loss of weight in our endeavor to make an early diagnosis, other causes of the loss must be excluded. Loss of weight, when coupled with the characteristic temperature curve furnishes very strong presumptive evidence of the existence of tuberculosis in some part of the body. Much has been said about a "pretubercular" condition, in which there is a decrease of weight, a sensation of general weariness, and loss of appetite, and which is supposed to render the person especially susceptible to tuberculosis. It is in these cases that an attack of influenza, measles, whooping-cough, pleurisy, pneumonia, or a "bad cold" is so frequently supposed to be the starting point of consumption. The physician recognizes this so-called "pretubercular" condition. Sometimes he administers iron, quinin, and other tonics, and thus tries to prepare the patient for the disease to which he is supposed to be specially susceptible, and I am by no means ready to deny that this treatment is beneficial. However, the mistake is made in looking upon this condition as "pretubercular;" it is tubercular, and the time to treat it is before the tuberculosis becomes a mixed infection by the advent of some intercurrent disease.

In taking the weight it is well to use the tables of Quetélet[1] or some modification of the same as a basis of comparison. Conradi[2] has given us a valuable paper on the decrease in body weight in tuberculosis, and he has pointed out the fact that decrease in weight is important evidence of the disease in its early stages. This decrease is due to want of assimilation; later, it may be in part due to fever. Conradi has pointed out the following facts: (1) The decrease in weight is greater in proportion to the prostration accompanying it than in most diseases. (2) The younger the patient the greater will be the loss in weight necessary to induce prostration. (By prostration the author here means inability, from weakness of the patient, to attend to his ordinary duties.) (3) After prostration decrease in weight continues, but, as a rule, not so rapidly.

Besides the above-mentioned evidences of tuberculosis there are many other conditions which should lead us to suspect the existence of this disease. Although thirty years have passed since Flemming[3] showed that pleurisy is due in a large per cent. of the cases to coexisting and preexisting tuberculosis, the profession has given but little attention to this matter, and attack after attack of pleurisy in the same individual is treated, while the tuberculosis, which is the cause of the pleurisy, is never thought of until the lungs are practically destroyed.

In 106 *post-mortems* Schlenker[4] found the pleura normal in twenty-one bodies (19.8 per cent.); pleura diseased in eighty-five (80.2 per cent.). The pleurisy was associated with extensive tubercular changes in the lungs in twenty-eight (26.4 per cent.); with latent tuberculosis of the lungs or bronchial glands in thirty-three (31.1 per cent.). There was tuberculosis without pleurisy in four (3.4 per cent.); and pleurisy without tuberculosis in twenty-four (22.6 per cent.). The author states that if tubercular lesions had been sought for microscopically the number of cases of pleurisy without tuberculosis would have been decreased.

I have come to believe that when physicians acquire and practise in the diagnosis of tuberculosis a degree of skill equal to that employed by surgeons in the recognition of appendicitis, pulmonary tuberculosis will be detected in its earliest stages; and when this is done it will be placed among the most easily curable of the graver infectious diseases.

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[1] "Ueber das Verhalten der Eigenwarme bei der Lungentuberculose," 1891.

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[1] "Sur l'homme et le development de ses facultes."

[2] "Ueber das Korpergewicht des Menschen und die Abnahme bei der Tuberculose." Leipzig, 1843.

[3] "Ueber die Häufigkeit der Combination von Pleuritis und Tuberkulose und das Abhängigkeitverhaltniss beider Krankheiten von Einander," Weimar, 1876.

[4] "Beiträge zur Lehre von der menschlishen Tuberkulose." See *Deutsche Med. Wochenschrift*, 1883, Nos. 31 and 32. Also Virchow's *Archiv.*, B. 108, S. 233.

CLINICAL MEMORANDA.

A CASE OF SPLENO-MEDULLARY LEUKEMIA; ONE OF LYMPHATIC LEUKEMIA, OR SPLENIC ANEMIA; AND FOUR CASES OF PERNICIOUS ANEMIA.[1]

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THE cases that I desire to show you to-night are three in number; and, in addition, I shall speak of three others. Of these six cases, representing various types of blood disorder, one is a case of undoubted spleno-medullary leukemia, and the diagnosis of the second lies between splenic anemia and lymphatic leukemia. The other four are cases of pernicious anemia.

The first case is that of D. B., aged thirty-three years, of Wilmington, Del., who is single and by trade a carpenter. He came under treatment October 7, 1896. His family history is negative. Two brothers and three sisters are in good health. The patient has worked in the Wilmington Car Shops for about sixteen years, and has never been seriously ill. He has never had chills, fever, or sweats, but has lived in a malarial district. He has been in the habit of drinking two or three glasses of whisky a day, and has occasionally gotten drunk. There is no specific history. Five years ago he began to have indigestion, the result, as is supposed, of irregular and hasty eating. These attacks consisted of headache and vomiting, were often accompanied by fever, and occurred at irregular intervals until the present trouble began. Five months ago he noticed a fulness of the abdomen, which he thinks has not increased in size since then. He did not suffer pain, but had a heavy dragging sensation in the stomach. He paid but little attention to his trouble and kept on working. About three months before admission he was conscious of a gradually increasing weakness, and this being accompanied by considerable dyspnea, he decided to consult his family physician, Dr. Brown of Wilmington, who treated him for several weeks and then brought him to the Jefferson Medical College Hospital.

On the day of his admission an examination of his abdomen revealed an immensely enlarged spleen extending considerably beyond the median line and to about three inches below the umbilicus. His general condition was good, and he had kept at work up to the date of his admission. His tongue was only slightly coated, the bowels were regular, and the appetite fair. His urine was acid in reaction, the specific gravity was 1024, and it did not contain albumin or sugar. Microscopic examination was negative. An ophthalmological report made on October 16th revealed the fact that the media and fundus were normal, that the field for form and color was normal, and that the veins were large and tortuous. There was no evidence of hemorrhage.

The patient was given increasing doses of Fowler's solution of arsenic until, at the end of a month, he was taking eight drops three times a day. He also received a dram of fluid extract of ergot thrice daily. On November 16th, on account of gastric irritability, fifteen drops of the Fowler's solution were given daily by the rectum, the ergot being continued by the mouth. The arsenic solution was gradually increased until forty-one drops were given twice daily, still per rectum. On December 7th the solution was increased to forty-five drops a day, in three doses, but on December 20th it was stopped on account of diarrhea. On the 21st he was given fifteen drops of the arsenic solution and a dram of ergot by the mouth daily, and this was continued until January 12th, when I went on duty at the hospital. The administration of the ergot was then stopped, but the Fowler's solution was continued, and was increased until he was taking thirty-two drops daily. On the 20th gastric disturbance again developed, and the arsenic was discontinued, but on February 2d it was resumed, but in smaller amounts. The examinations of the blood, from the date of his admission to the present time, have given the following interesting results:

Date.	Hemoglobin, per cent.	Erythrocytes.	Leucocytes.	Proportions.
Sept. 30, 1896	28	2,458,000	368,750	1 to 6, L. 6 per cent., M. 15 per cent., P. 60 per cent., E. 5 per cent.[1]
Oct. 2, "	25	2,700,000	386,000	1 to 7.
" 16, "	28	2,800,000	241,666	1 to 11.
" 26, "	40	2,322,000	139,000	1 to 16, L. 1 per cent., M. 28 per cent., P. 51 per cent., E. 4 per cent., My. 3 per cent.
Nov. 8, "	45	2,064,000	118,000	1 to 17.
" 20, "	50	2,148,000	93,750	1 to 23.
Dec. 25, "	60	3,600,000	217,190	1 to 17.
Jan. 9, 1897	63	4,000,000	60,000	1 to 68, L. 4 per cent., My. 4 per cent., P. 66 per cent., E. 10 per cent., M. 6 per cent.
Feb. 2, "	63	4,000,000	19,000	1 to 210.
" 16, "	70	4,100,000	80,000	

It will be seen, therefore, that at first the condition of the blood was bad, there being 368,750 white cells to 2,458,000 red ones. Myelocytes were present, and the lymphocytes were decreased in number. The number of polynuclear cells was about normal, and the number of the mononuclear cells increased.

Physical examination of the patient, January 12th, showed the spleen to be enlarged, as shown in the accompanying picture (Fig. 2). At the present time it has decreased two-thirds in size, and the man is almost well.

The second case presents a most interesting history. The patient was under my care for several months a year ago. At that time the splenic enlargement was such as is shown in Fig 3.

There were areas in which loud anemic murmurs were heard; his color was sallow, and his eyes had that peculiar fatty, yellow appearance seen in some cases of pernicious anemia. His history is as follows:

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[1] Read before the Philadelphia County Medical Society, March 10, 1897.

[1] The letter L. stands for lymphocytes, M. for mononuclear leucocytes, P. for polynuclear or polymorphous leucocytes, and E. for easinophiles. My. stands for megalocytes.

J. P., aged twenty-four years, single, a barber by occupation. Both parents are dead, the cause of death being unknown. One brother died in infancy, and one sister, six or seven years ago, of pulmonary consumption. Two sisters are alive and well. The patient stated that he had never been in the habit of taking whisky, and has smoked only in moderation. He had measles at seven years of age, and an attack of *grippe* seven years ago that confined him to bed for four weeks. Part of this time he was delirious. In February, 1894, he states that he had a severe attack of double pneumonia, but completely recovered in five weeks. In November of the same year he, at that time being a miner, lost his balance while at work and rolled for a distance of about thirty feet, sustaining considerable injury to the head and neck. He was unconscious when picked up, but reacted speedily, and two weeks later resumed work.

FIG. 1.

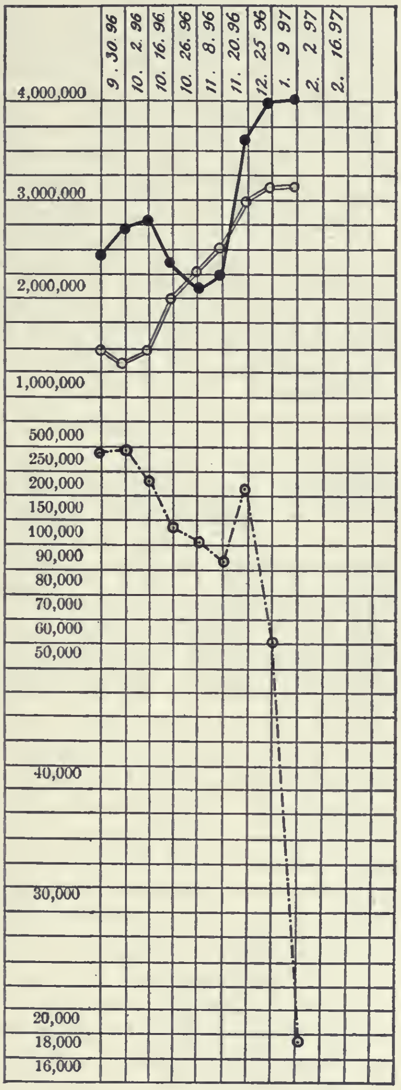
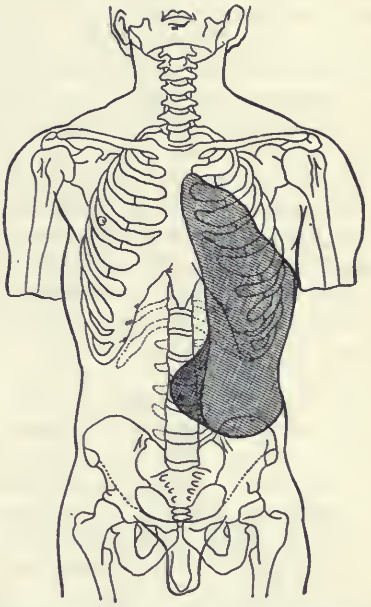


Chart showing the *great decrease in white cells* and the *increase in red cells* and in hemoglobin in Case I. of spleno-medullary leukemia.

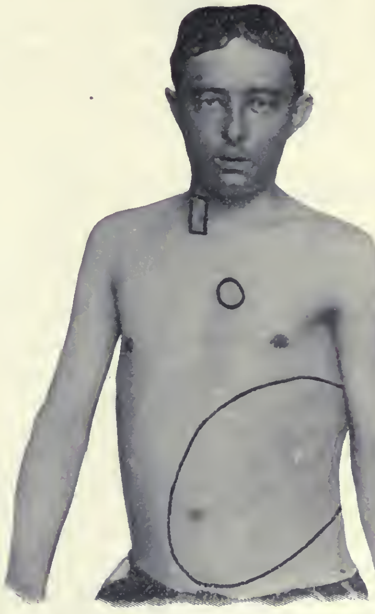
FIG. 2.



CASE I.—January 12, 1897. Lightly shaded area shows area of cardiac and splenic dulness on percussion. The dark addition near the umbilicus shows the additional splenic area discoverable on palpation. On March 10, 1897, the spleen extended only to three inches below the last rib in the mamillary line.

On October 8, 1895, he was admitted to the Jefferson College Hospital for the first time, and stated that his illness began in July, 1895, the onset being marked by moderately severe pain beneath the clavicle. It persisted at this

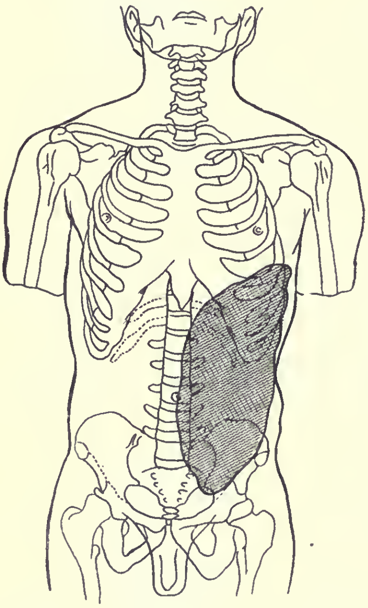
FIG. 3.



CASE II.—The large outline shows the splenic area; the smaller ones the situation of anemic murmurs.

point for three days, and then descended to the left hypochondriac region and became intense. A few days previous to the onset of pain, he noticed puffiness beneath the eyes and a decided swelling of the entire face. Profuse sweating occurred coincidently with the pain, the face became pale, and the pulse rapidly increased in frequency until it numbered 160 per minute. The respirations were embarrassed, and the temperature was 100° F. There was complete loss of appetite, and the bowels were constipated. He also states that he was unconscious for a period of three days. Loss of flesh and strength was marked, and his weight diminished from 130 to 116 pounds. He remained in bed for one month afterward and regained his weight, but the pain, varying in intensity, continued in the region of the spleen. There was a sense of weight in this region which became more and more perceptible, particularly, when the body was jarred.

FIG 4.



CASE II.—January 12, 1897. Shows area of splenic dulness as compared to the illustration showing its size in 1896.

When admitted to the hospital the most noticeable feature of the case was the extreme pallor of the face. The conjunctivæ were tinged with yellow, and the complexion was sallow. The lips, gums, and tongue were bloodless. The tongue was clean but flabby, the appetite fairly good, the bowels regular, the pulse 94, the respirations 22, and the temperature 102.4° F. Examination by palpation showed a large mass occupying the left hypochondriac region and extending back into the lumbar region. Auscultation of the heart revealed an anemic murmur at the base. A venous hum was heard in the neck.

The urine was amber colored, acid in reaction, and of a specific gravity of 1025. There was no albumin or sugar. Urea was present in the proportion of four grains to the ounce. The microscope showed red blood-cells in abundance, and a few granular leucocytes and epithelial cells.

On October 30, 1895, an ophthalmoscopic examination showed numerous hemorrhages through the retina of each eye. They were old and irregular in outline, and especially abundant near the disks. The veins were large and tortuous. On October 21st and 23d the patient had several slight attacks of epistaxis. He left the hospital on December 23d, promising to return to the out-patient medical department to have his blood counts made. On February 4, 1896, he returned complaining of hematuria. He was slightly paler, but was in about the same condition as when he left the hospital. He now remained in the ward until July 6, 1896, when he was discharged, against the wishes of the physician in charge, but slightly improved, and went to work as a barber. He again returned to the hospital on January 9, 1897, and said that he had felt very well all summer until September, when he was put on very poor diet, consisting of tea, coffee, rye-bread, and a little meat at noon. He gradually became more and more weak until New Year's day, but still kept at work, complaining of general weakness, headache when in the erect position, shortness of breath, and swelling of the feet and limbs, especially after standing. He made the journey to the hospital in the ambulance.

On admission to the wards his temperature was 101° F.; pulse, 130, and repirations, 24. On January 13, 1897, the writer again went on duty, and examination showed murmurs to be present in the carotids. The anemic murmurs were not as marked as they were last year. He had severe bronchitis due to exposure. The degree of splenic enlargement is shown in Figure 4. On February 20th and 21st he had attacks of epistaxis. He was ordered fifteen grains of ferratin three times a day.

His blood examinations have given the following results:

Date.	Hemoglobin, per cent.	Erythrocytes.	Leucocytes.	Remarks.
Oct. 9, 1895	30	2,060,000	8000	
" 12, "	30	1,792,000	6000	
" 15, "	20	1,400,000	9000	
" 17, "	20	1,400,000	9000	
" 21, "	14	1,100,000	6000	
" 25, "	18	1,000,000	7000	
Nov. 4, "	23	1,300,000	5000	
" 12, "	25	1,500,000	6000	
" 21, "	30	1,600,000	6000	
Dec. 7, "	32	1,800,000	7000	
" 25, "	30	1,950.000	5000	Lymphocytes 84 per cent., mononuclear 4 per cent., polynuclear 8 per cent., eosinophiles 3 per cent.
Jan. 20, 1896	30	2,152,000	6000	
Feb. 12, "	38	2,545,000	8000	
" 29, "	42	2,580,000	7000	
Mar. 16, "	35	2,000,000	6000	No alteration in the shape of the erythrocytes.
April 1, "	35	2,180,000	5000	
" 23, "	38	2,000,000	5000	
" 29, "	38	1,992,000	6000	
Jan. 11, 1897	30	2,000,000	4500	
" 30, "	48	2,800,000	4000	
Feb. 5, "	35	2,500,000	5000	
" 16, "	33	2,024,800	6200	

The large number of lymphocytes (eighty-four per cent.) in this case would apparently place it under the head of that somewhat rare type of leukemia called lymphatic leukemia, but there is an entire absence of enlargement of the lymph glands and, what is far more important, the increase in lymphocytes is purely relative, the total number of white cells being actually lower than normal. Aside from this state of the white blood cells, the case might well be classed with what has been called pure splenic anemia, or splenic pseudo-leukemia. Thus, we find the enlarged, and at times painful, spleen, the fact that the disease is commonly found at this patient's time of life, and in his sex, and that the anemic fever has also been present. Further than this, in splenic anemia we often have a decrease in the number of red cells to one-half, with a similar falling off in hemoglobin. Banti has regarded this state as a purely splenic form of pseudoleukemia, or Hodgkin's disease.

The third case is one of true pernicious anemia, which may, perhaps, be placed among the few that have been cured. The patient certainly shows a wonderful improvement, and one that is more marked than is usually met with in cases of this disease. He is before you, and you can at a glance perceive his ruddy hue. His history is as follows:

F. R., aged thirty-nine years, a lumberman, single, born in Ireland. He was admitted to the Jefferson Medical College Hospital on May 11, 1894.

His parents died at an advanced age, the cause of death being unknown to him. They had always been very healthy. The patient is one of nine children and, so far as is known, all of his brothers and sisters have always been in good health. His previous history is that he had some of the diseases of childhood, but after that was exceptionally strong and healthy, having no sickness of any kind until about twenty years of age, when he had an attack of serous diarrhea, which lasted all summer. The cause of the attack is not known. The diarrhea disappeared during the winter, but has persisted every summer since the first attack, with occasional outbreaks, however, during the winter months. Fourteen years ago he had croupous pneumonia. He was sick three weeks, and then recovered completely. After this he had good health, excepting the above-mentioned diarrhea, until April, 1893. At that time he began to have nausea, with with occasional attacks of vomiting, unconnected with the taking of food. The vomited matter consisted usually of greenish mucus or fluid, but was never in large quantity. During the worst periods of the attacks he would vomit two or three times daily. He had a poor appetite, and noticed that his skin was quite yellow. His diarrhea and vomiting continued to get worse, and in May, 1893, he entered the Williamsport Hospital, where he remained four months, under treatment for "some disease of the liver." After leaving the hospital he felt better, the vomiting ceased, the diarrhea had disappeared, and he had gained considerably in weight, but he remained very weak. He worked for a while driving a team, but this work soon became too hard for him, and in April the old trouble returned as before, and continued to grow steadily worse. He decided to come to Philadelphia for treatment, and was admitted to Jefferson Hospital on May 11, 1894.

His condition on May 18, 1894, was as follows: He presented a markedly anemic appearance, the skin having a slightly yellowish tinge. The lips and ears were almost bloodless, and the tongue pale, but clean. His appetite was fair, and his bowels quite loose. He had been gradually losing weight. His temperature ranged from 99° to 101° F., his respirations from 24 to 30, and his pulse from 68 to 80.

An ophthalmological examination showed that his pupils responded to light and accommodation. The conjunctivæ were infiltrated with a lemon-yellow fat. There were numerous fresh and old hemorrhages into the retina. The disks were anemic, and the veins and arteries could scarcely be distinguished on account of the pallor of the blood. A chest examination showed the skin to have a light yellow tinge, with extreme pallor and superficial edema. The respiratory movement was good, and there was slightly increased vocal fremitus on the right side. Auscultation and percussion were negative. The impulse of the heart could scarcely be felt. The apex beat was normal in position, but it could only be determined by auscultation. There was no increase in cardiac dulness. Auscultation revealed a soft systolic murmur, heard best at the base and at the second costal cartilage at the left of the sternum, which was not well transmitted into the neck. The liver was normal in size and could not be palpated. There was no increase in the area of splenic dulness. The abdominal examination was otherwise negative. The feet were slightly edematous. The urinary examination showed it to be acid in reaction and light yellow in color. No albumin or sugar could be found. The specific gravity was 1014. Repeated examinations of the feces did not reveal the presence of parasites of any description. The sputum examination was negative.

The blood examination gave the following results:

Date.	Hemoglobin, per cent.	Erythrocyes.	Leucocytes.	Volume, per cent.	Remarks.
May 14, 1894	15	973,000	7000	25	Microcytes, macrocytes, poikilocytes.
June 14, "	10	664,000	5000	14	
July 9, "	50	2,500,000	5000	50	Almost all corpuscles are normal.
" 24, "	55	2,600,000	8000	52	
Aug. 14, "	55	2,650,000	9275	53	
Sept. 12, "	60	3,800,000	10,000	76	

The patient was discharged from the hospital September 13, 1894, very much improved in health. His symptoms had all disappeared. He then went to work in the pine forests of Bradford Co., Pennsylvania, and his old trouble gradually returned. He was again admitted to the hospital August 28, 1896. He was very weak and anemic, and had diarrhea and vomiting, with pain over the epigastrium. He also had considerable cough with a clear, frothy expectoration. The urine was acid in reaction, and had a specific gravity of 1022. No albumin or sugar was present. The ophthalmologic report on September 22, 1896, was as follows: Pupillary reaction normal; conjunctivæ pale; media clear; nerve white; veins tortuous; retina apparently normal in both eyes. Vision O. D. $\frac{6}{8}$; O. S. $\frac{6}{30}$. In the right eye no hemorrhages had occurred, the veins were full, and there was some chromatic disturbance. The left eye showed a round disk, very pale, full veins, and a patch of choroiditis near the nasal side of the disk. Following is the record of his blood count since his last admission:

Date.	Hemoglobin, per cent.	Erythrocytes.	Volume, per cent.	Leucocytes.
September 1, 1896......	35	1,180,000	23	5000
“ 7, “	35	1,150,000	23	6000
“ 14, “	26	1,109,000	23	4000
“ 21, “	26	941,000	20	3120
“ 22, “	23	886,000	20	3800
“ 23, “	25	1,200,000	22	5000
“ 24, “	28	1,045,000	21	3125
“ 28, “	26	1,333,250	26	6250
October 10, “	30	1,500,000	31	3750
“ 19, “	36	1,233,000	26	9275
“ 29, “	53	1,600,000	35	9375
Novemb'r 17, “	65	1,400,000	30	10,937
December 4, “	80	3,960,000	78	14,000
January 5, 1897......	65	3,200,000	65	9375
“ 16, “	60	3,080,000	62	9375
February 5, “	85	4,000,000	80	24,000
“ 18, “	90	4,360,000	..	10,900

Under full doses of arsenic and sulfate of iron the number of red blood-corpuscles has increased from 886,000, on September 22d, to 4,360,000 on February 18th. He presents every aspect of being cured, although the possibility of a fatal relapse is always to be remembered in this disease.

The fourth case is also one of pernicious anemia, the patient being temporarily better, but not so markedly so. S. S. D., aged sixty-one, consulted me January 30, 1895, stating that for two months he had not been feeling well. His stomach and bowels were out of order, and his fingers and feet were cold, but he did not cough. There was no mucus in his stools, and his sleep was not disturbed. An examination of his urine gave negative results. This condition of general debility improved under treatment, and I did not see him again until the twenty-fifth of the following October, an interval of nearly nine months, when he came back complaining of slight debility. I saw him again on March 17, 1896, when he complained of gastric disturbance, for which I gave him condurango. I noticed that his face was a little drawn to the right side and that he was markedly anemic in appearance, but he stated that he had always had this chalky color and was naturally pale. Ten days later he was somewhat better, and on June 25th he reported himself as being very much improved. I did not see him again until November 12, 1896, at which time he presented himself in a condition of very advanced anemia. There was a faint mitral systolic murmur, some dyspnea on exertion, and his fingers were a little blue. His urine analysis was negative. Three weeks later he came to my office again complaining of very great shortness of breath, the dyspnea being so marked as to seriously incommode his movements. At this time an examination of his blood gave the following results: Hemoglobin, thirty per cent.; corpuscles, volume, twenty-five per cent.; number, 1,332,000; leucocytes, 5000; lymphocytes, ten per cent.; mononuclear leucocytes, thirty per cent.; polynuclear leucocytes, fifty-five per cent.; eosinophiles, five per cent. The blood also showed marked poikilocytosis, and microcytes, and macrocytes were present, the latter being very large. There were also numerous normablasts and gigantoblasts. Macroscopically, the appearance of the blood was slightly paler than normal. It was quite thin and did not coagulate readily.

He was immediataly put upon peptomanganate of iron and ascending doses of arsenic. Ten days later the dyspnea was still present, but his sleep was better. I then ordered for him a wineglassful of maltale twice a day. His blood count at this time showed: Hemoglobin, twenty-eight per cent.; red corpuscles, volume, thirty per cent.; number, 1,060,000; white cells, 8000; lymphocytes, sixteen per cent.; mononuclear cells, twenty-five per cent; polynuclear cells, fifty-nine per cent.; eosinophiles, none. The difference in the count and in the results from the hematokrit seemed to be caused by the megalocytes; otherwise, the condition of the blood was practically the same as at the previous examination in regard to poikilocytes, microcytes, and megalocytes.

On January 23d, the patient expressed himself as feeling much better, and he *looked* much better. At this time the hemoglobin was 35 per cent.; red corpuscles, volume, 33 per cent.; number, 1,520,000; white cells, 6000; lymphocytes, 16 per cent.; mononuclear cells, 32 per cent.; polynuclear cells, 52 per cent.; no eosinophiles. There were only a few poikilocytes and megalocytes. It is noted the blood showed a marked improvement over previous examinations.

On January 6th, 1897, the examination resulted as follows: Hemoglobin, 37 per cent.; red cells, volume, 42 per cent.; number, 2,212,000; leucocytes, 6300; lymphocytes, 20 per cent.; mononuclear cells, 16 per cent.; polynuclear cells, 60 per cent.; eosinophiles, 4 per cent. Microscopic examination revealed a few microcytes and macrocytes, and only an occasional poikilocyte.

On February 2, 1897, he reported that he had gained eight pounds since December 1st. The liver and spleen are still normal in size, the appetite is good, and the bowels regular. He sleeps well, does not cough, and there is much less shortness of breath. He has taken the maltale regularly, but during his entire illness has never been able to take more than six to eight drops of Fowler's solution of arsenic a day, with pepto-mangan, without developing gastric irritability. He has had massage twice a week for six weeks. An examination of his blood at this date showed: Hemoglobin, 45 per cent.; red cells, 2,400,000; volume, 46 per cent.; leucocytes, 10,000; lymphocytes, 5 per cent.; mononuclear cells, 25 per cent.; neutrophile cells, 70 per cent.; eosinophiles, 5 per cent.

Microscopic examination shows a few poikilocytes and microcytes.

On February 24, 1897, he reported that he was improving in every way. An examination of his blood gave the following results: Hemoglobin, 35 per cent.; erythrocytes, 2,250,000; leucocytes, 12,500. A few microcytes, rather numerous macrocytes, and a considerable number of poikilocytes were present. This case showed marked improvement on active hematic treatment. Whether the improvement will persist remains to be seen.

The fifth case, also one of pernicious anemia, is that of F. L., born in Pennsylvania, aged forty-four years, a carpenter by occupation. He was admitted to the Jefferson College Hospital with the following history: His father died of alcoholism. His mother had some nervous affection. His brothers and sisters are all living, and healthy, in his opinion, but cross examination showed that one sister was decidedly pale, and had white patches on the skin such as he had. The patient had the ordinary diseases of childhood, and malarial fever eleven years ago, which lasted six months. Otherwise he has always been strong and healthy until four years ago, when he began to suffer from weakness, but was not confined to bed. He has never lost flesh, does not cough, or have sweats, and has no alcoholic or specific history. The appetite was good, the bowels slightly constipated. The urine had a specific gravity of 1018, was acid in reaction, and did not contain albumin or sugar. The blood examination on March 15, 1895, showed hemoglobin, 17 per cent., and red corpuscles, 1,340,000. The red blood-corpuscles showed slight poikilocytosis, and there were megalocytes and microcytes in considerable number. Only about 5 per cent. of the red corpuscles were normal. The white blood-corpuscles were normal and there were no malarial organisms. Inspection showed a well-nourished man, intensely pale, the pallor being of rather a yellowish hue, the subcutaneous tissues were well filled with fat. The heart and lungs were normal, except that the heart sounds were feeble. The spleen was not enlarged, and the liver dulness was normal. There was no abdominal disease, but deep palpation in the area proper for the head of the pancreas revealed the presence of a small swelling. He was placed upon ascending doses of Fowler's solution of arsenic and reduced iron, three times a day, the latter being given in ascending half-grain doses.

On March 26, 1895, the hemaglobin was 10 per cent., and the red blood-corpuscles numbered 760,000 to the cubic millimeter. On the 29th, the hemoglobin was 10 per cent., and the red blood-corpuscles, 548,000. On April 1st, the hemoglobin was 8 per cent.; the red blood corpuscles, 520,000, On April 5th, the hemoglobin wes 8 per cent.; the red blood-corpuscles, 454,000.

The patient died on April 6th. The *post-mortem* showed well-marked rigor mortis, abundant subcutaneous fat, muscles well preserved and very red in color. The bone marrow was chocolate-colored. There was a small, clear effusion in the right pleural cavity. The left pleura was universally adherent and the cavity contained six ounces of clear fluid. The pericardium contained six ounces of clear fluid. The right ventricle was flabby and relaxed, the left being firm and contracted. There were no clots in either ventricle or in the vena cava. A large chicken-fat clot was found in the pulmonary artery. The aortic valves were patent; the mitral valves were slightly thickened. The cardiac muscle was pale, flabby, soft, and cloudy. The pericardial fat showed a tendency to invade the heart muscle. The aorta was pale and unusually soft and elastic, and was pared both longitudinally and transversely with little difficulty. The heart weighed fourteen ounces. The right lung showed extensive gelatinous edema. The peribronchial glands were pigmented and a few of them were calcareous. The bronchi were normal.

The sixth case resulted in recovery, although it was apparently one of pernicious anemia. J. D., aged forty-four, a coal-miner, was admitted to the Jefferson College Hospital January 31, 1895. His father died of enteric fever. His mother was living and well. He had the ordinary diseases of childhood and had always been healthy until three years before, when he began to have a sensation of numbness in his fingers. Four months before he had noticed a similar numbness in the feet and legs, with a sensation of fulness in the stomach and a chilly sensation in the lumbar region. He was markedly anemic. His urine had a specific gravity of 1020, and was acid in reaction, but did not contain albumin or sugar.

On March 13, 1895, an examination of his blood showed poikilocytosis, the corpuscles varying very much in shape. There were numerous macrocytes and microcytes. There was a slight diminution in the number of white blood-corpuscles. The hemogoblin was forty-five per cent., and the red blood-corpuscles numbered 2,500,000. He was given ascending doses of Fowler's solution of arsenic with half a grain of Quevenne's iron, three times a day. On March 30th, the hemogoblin was fifty-eight per cent., and the red corpuscles 3,320,000, with very few poikilocytes. April 12th, the hemogoblin was eighty per cent., the red corpuscles, 4,060,000. April 23d, the hemogoblin was eighty per cent., red corpuscles, 4,400,000. The hematokrit gave ninety-four volume per cent.

I have reported these cases because it seemed to me that each of them possesses considerable clinical interest. The first case shows a very great improvement, and a decrease in his white cells to an interesting degree. The second case, as already pointed out, shows a great increase in lymphocytes, yet no actual increase in white cells, so resembling lymphatic leukemia, and yet not following its usual blood count. The third, that of pernicious anemia, is certainly interesting as manifesting an apparent cure, and certainly a great improvement, although clinical experience shows that a fatal relapse will probably ensue. The fourth also shows a very great improvement, sufficient to justify hopes of cure if the patient has not already come to a standstill. Unfortunately we know too well the fatal history of most cases of pernicious anemia. The fifth presents an instance in which the disease pursued a rather rapid and fatal course, with every characteristic, both *ante-* and *post-mortem.* Finally, the sixth case, like the third and fourth cases, illustrates how a patient apparently in the early stages of pernicious anemia can either be cured or the disease arrested, although, as it is a hospital case, I cannot vouch for his permanent recovery.

In conclusion, I desire to thank Dr. A. H. Stewart for the various blood counts recorded in this paper.

MEDICAL PROGRESS.

Treatment of Gunshot Wounds of the Head.—In 38 cases of gunshot wound of the cranium treated in Bardeleben's clinic, TILMANN says (*Deutsche Mil. Zeitschrift*, 1896, Hft. 1) that the following results were obtained: Out of the whole number, 21, or 55 per cent., recovered; of the 16 in which penetration into the cranial cavity could not be ascertained, all recovered; of the 22 in which the ball had entered the cranial cavity, 5 recovered, or about 23 per cent. Almost identical results were obtained in the 197 cases of gunshot wound of the cranium, which is the entire number of these cases so far treated in the clinic: Eighty-three (42.1 per cent.) died; 114 (57.8 per cent.) recovered; of the 72 non-perforating wounds, but 1 died; of the 125 in which penetration had taken place, 82 (65.6 per cent.) died; 34.4 per cent. ended in recovery. The sixteen in which there was no penetration of the ball were treated simply by a thorough cleansing of the wounded area, wiping out of the wound with dry balls of gauze, and covering it with iodoform, or sterilized gauze, and encasing all with a little cotton and collodion. In two cases in which there was hemorrhage the superficial temporal arteries had to be ligated. The wounds healed within two or four weeks without fever. In one case the wound remained patent, and in one case the flattened ball, which remained embedded, was cut out after complete cicatrization.

Six out of the twenty-two cases in which the ball had penetrated were brought in unconscious and died within six hours. On *post-mortem* there was found to be a slight comminution of the part where the ball had entered with fine fissures about one centimeter in length radiating from the wound of entrance; in one case fine chips of bone were found to be embedded to the depth of five centimeters in the substance of the brain. Three of the six cases that were brought in unconscious were bleeding from the temporal artery, the ligation of which was accompanied by the oozing of brain substance with clotted blood; these died within twenty-four hours. In five cases the middle meningeal artery was wounded; and in two of these cases the first clue to the involvement of the middle meningeal was paralysis on the opposite side of the body, appearing first in from five to thirty-one hours, and inducing death before an operation could be undertaken. In three other cases the primary trephining, with ligation of the artery, was undertaken, without success, however. Death was due in one case to secondary hemorrhage, which took place on the ninth day, just as the bandage was being changed. Of the other cases one patient died of meningitis, and another succumbed to a severe hemorrhage into the cavities of the brain. In seven cases secondary trephining was performed; in two of them, after twelve hours, because of the development of paralysis (one recovery); in three other cases, on account of fever, operation was performed after three days (two succumbed to meningitis purulenta, one recovered); and in one case after two, and in another after nine days, for removal of the impacted ball (both recovered).

Primary trephining is indicated when there is considerable arterial hemorrhage, and if symptoms of lateral paralysis or spasms are present. Later, this operation may be indicated when fever develops with lateral paralyses, and also when the presence of the ball in the wound has been ascertained. Otherwise it is better to wait; for, as a rule, the removal of the chips of bone will be impossible. Under this latter treatment, in five cases in which the ball had penetrated both tables of the skull, five recovered, one even without any operation. The most serious symptom is continued unconsciousness.

Gonorrheal Endocarditis.—A case of endocarditis due to gonorrhea came under the observation of MICHAELIS. A man, twenty-five years of age, in the third week of an attack of acute gonorrhea, was seized with severe rheumatic pains in the finger joints. The metacarpal-phalangeal joints of the third and fourth fingers became much swollen; temperature, 102.4° F. After a few days a scraping, systolic murmur was heard in the aortic region, and on the twelfth day after admission to the hospital, the patient with but a moderate fever succumbed to a fatal syncope. On section a verrucose mass about the size of a hazel nut was found attached to the aortic valve, and beneath this was a rupture. Microscopic and bacteriologic examinations revealed the presence of gonococci. (*Zeit f. Klin. Med.*, 1896, Bd. 29.)

Treatment of Chronic Empyema by Decortication of the Lung.—DELORME (*Gazette Hebdom. de Med. et de Chir.*, No. 95, p. 1129) reports nineteen cases of chronic empyema of from six months' to eleven years' duration, in nine of which the above-mentioned procedure effected either an entire obliteration of the cavity or greatly increased pulmonary expansion. Failure resulted from pulmonary tuberculosis, either unrecognized or following an otherwise successful operation, or from inability to detach the fibrinous covering of the lung.

The cavity should be disinfected for several days before the operation. No special instruments are needed. Those used should be long and blunt. Most of the work can be done with the fingers. The presence of adhesions should be determined before opening the chest-wall, and to avoid shock the operation should be as rapid as possible, and the region of the pericardium and diaphragm avoided. Care should be taken not to penetrate the lung in the first incision through the membrane. Should this occur, a fresh incision should be made. Hemorrhage is slight, when neither parenchyma or visceral pleura is wounded.

In the after-treatment, exercise and pulmonary gymnastics are advisable. When decortication is impossible, the operation must be abandoned, and that of Estlander or Schede substituted.

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SATURDAY, MARCH 27, 1897.

THE EFFECT OF DIET AND STARVATION IN MICROBIC POISONING.

THE old saw, "Starve a fever," finds justification in a report made to the Paris Academy of Sciences by Teissier and Guinard, February 15th. As a result of their experiments these gentlemen claim that complete or partial abstinence from food lessens the effects of toxins. Dogs were the subject of their experiments, and the pneumobacillus and the diphtheria bacillus were the germs employed. Twenty-two animals were subjected, while in a starving condition, to injections of toxin in amounts which invariably killed the control animals. Four of these recovered, and in those which died the intestinal lesions and those of the liver and spleen were less marked in the starving animals than in those which had received food. To obtain this increased power of resistance against the poison it is necessary that the animal should suffer lack of food for some time. If the starvation diet has continued only five or six days, and if, owing to surplus fat, the animal is able to resist the effect of starvation, he falls a prey to the toxin as readily as an animal receiving food.

Two hypotheses have been advanced to explain this interesting phenomenon. One presupposes that the cellular elements of the body being starved, as it were, are ready to seize upon and assimilate whatever is presented to them, and that they destroy the toxins before they have time to act. According to the other hypothesis, the toxins act slowly or not at all, because the organism in its starving condition does not supply the elements whose presence is essential for the production of the active poisons. The second hypothesis seems to the investigators to be the better explanation.

SOME FURTHER CONSIDERATIONS OF HOSPITAL AND DISPENSARY ABUSES.

MASQUERADING in the garb of charity, the aim of most hospitals is to attract large numbers of paying and curable patients. A fair pecuniary return for services and a low death-rate make the sleek philanthropist rub his hands in glee.

The real autocrat of the hospital is the superintendent. However kind-hearted he may be by nature, he is so fettered by rules that, to secure admission, an ability to pay on the part of the patient becomes the prime requisite, real need a secondary consideration. The admitting physician gives to the financial status of the patient no attention, and to his real need, little. He is looking for quickly curable cases that his service may be full and brisk and his death-rate low. Between the two, *viz.*, the automaton of adamantine charity and the man of science, God help the poor man who is almost moribund or a chronic and uninteresting invalid!

In various ways, subjected to no real discrimination, about 75,000 people yearly avail themselves of nearly gratuitous medical and surgical attendance, medicine, surgical dressings, nursing, board, lodging, and washing in the hospitals of New York City.

The prime idea of managers of dispensaries is to report yearly the greatest possible number of patients treated, prescriptions filled, and visits made by their district physicians. Largely dependent for support, as most of them are, upon voluntary contributions, the more show they make of their indiscriminate giving, the more money will they receive. It naturally follows that in less than half our dispensaries only a mere pretense of inquiry is made into the real necessity of the patient. In almost none are adequate measures employed to detect and prevent fraud. In few, if any, is the doctor vested with any discretionary power. Thus rich and poor alike find welcome shelter under, not as they would like to think, the ample cloak of charity, but what really is the pall of self-respect and the shroud of honor.

What does the vainglorious Charity King care if the sick, by subterfuge and deceit, and with his connivance and assistance, cheat the poor doctor of his modest dues? Will not the patient, by this crime, have more money with which to buy of the Charity King his high-priced coal and gas, his flour and sugar, and be readier with the exorbitant rent for his unsanitary and stuffy rooms? As long as he has his own servile physician at his beck and call, what does he care for the rank and file of the profession? For the meek and devoted physician, whom he makes give away his brains at his pet dispensary, he has no more respect than for his butler or coachman; and why should he? Does he not remember how this same man struggled, nay, grovelled, for the appointment? How he has for years willingly worked for his own impoverishment and debasement? How, when that has been effected and he has died in the harness poor and devoid of self-respect, a hundred other men have fallen over each other in their eagerness to wear the shackles? Why should we look for respect when our own self-respect falls so low? Why grumble when the Charity King, to intensify the refulgence of the benevolent halo surrounding his emphysematous head, gives freely what are not his, our brains and very life!

Hospital and dispensary managers are disinclined to allow the physicians any credit for the institutions' benefactions. They unanimously claim that the physician is fully paid for his services, if not in money, by professional experience thus gained. Does not the physician tacitly acknowledge this compensation by his eagerness to secure the position and year after year do the work uncomplainingly? Stripped thus of his only glory (for how many dispensary physicians will acknowledge themselves actuated in their work by charity alone), the tool of professional philanthropists, he is compelled by his misguided policy to prostitute his profession, to give his brains to the undeserving, to take the very bread from his own and his brother's mouth, and dig his own material grave. What bosh to talk about respect or self-respect or to complain of being treated like a chattel! Haughty Pharisees hoisted aloft by gifts not theirs and servile physicians patient at their suicidal work—what a sight is that! And yet it is at our very doors, under our very eyes.

And the clinics? What of them? They are the most flagrant offenders of all! At our nine medical schools there are some two hundred clinical professors, lecturers, and instructors, who must have clinical material at any price, and in any way. It comes from hospital wards, from dispensaries, from their own practice, from their neighbors' practice. If not in town, from out of town. In the sharp competition, a rare case is welcomed though in affluent circumstances; interesting cases are sought out and treated gratuitously, even if well-to-do, while the uninteresting pauper is neglected or referred to a dispensary. Well-to-do patients are sent by country and city doctors to clinics to get skilled advice free, when they can well pay moderate fees. Patients themselves, by their own intuition, come to clinics for the free opinion of the "Professor," and perhaps for free treatment, and generally get both, although in comfortable circumstances.

Patients come from country and city to consult distinguished specialists who, instead of turning them over to younger, less renowned men when they find they cannot pay large fees, relegate them to their clinics where they get advice and treatment gratis.

Thus in hospital, dispensary, and clinic the baneful dance goes on until medical charity has become a disgrace and medical honor a byword. Looking beneath the surface, aside from its medical aspect, this craze for getting something for nothing, allowed by us who lose, encouraged by those who lose nothing, betokens a state of social and moral rottenness truly appalling.

Is there no remedy? Appeal to the public would be useless, as long tolerance and encouragement have led it to regard gratuitous medical attendance as its right. Appeal to the Charity Kings would be futile, as long years of servility on our part makes protest impertinence. Unanimous, persistent, and concerted action on the part of physicians is unknown and impossible, so thoroughly is our professional structure undermined by servility and selfishness. The rising generation of physicians will not help us, trained, as they are by precept and example, to lax ethics and commercial ways. Some ray of hope might come from future students if, by example and by plain, honest, undergraduate instruction, the hardships, trials, temptations, and possible triumphs of professional life were depicted to them and they were shown the necessity of attaining and holding to a high ideal as alone conducive to lasting contentment and self-respect.

If we turn in our despair to official organizers of charity we see them thrown into spasms of virtuous indignation at the distribution of a few loaves and fishes by a sensational newspaper and the temporary housing of a few vagrants, during a freezing blizzard, by an organization of Christian workers. Such antics are amusing to us who, for twenty years, have seen unchecked pauperization attain gigantic proportions under their very noses. Their affectation of infallibility in dispensing charity may please themselves but does not deceive others. Their claim, that indiscriminate giving is degrading and should be stopped, is right, but why should they pounce with such furor upon a single kindly, but perhaps unwise, act of unorganized charity, while conniving at the daily misdemeanors of organized charity? Why champion the cause of butchers, bakers, and lodging-house keepers and ignore the depredations inflicted upon a learned and bevolent profession.

No sane person would admit that, in 1893, one-third of our population, 1,800,000, were paupers. Yet, in that year, our city dispensaries treated 680,789 patients. That a large number of these recipients were unworthy does not ruffle organized charity in the least, but, had the donations been food or shelter instead of doctors' brains, what a mighty howl would have gone up.

Indiscriminate giving is degrading and demoralizing to the recipient, and its unchecked growth foreshadows a social plight from which all right-minded citizens should recoil with horror. Instead, therefore, of straining at gnats, let charity organizers at once attack and abolish an evil most pregnant with danger to good citizenship.

No institution should be allowed to give alms, whether food, fuel, shelter, or others' brains, unless it is in position to prove, in each individual case, that the recipient is worthy. That would mean the employment of a detective force commensurate with its sphere of action. That requirement and a full accountability for indiscriminate and improper almsgiving would do more to restore and preserve an honest and self-respecting citizenship than anything else, and should be speedily embodied in some legal enactment.

Meanwhile there is something that even the humblest member of the profession can do to mitigate the present deplorable state of affairs. He can treat poor patients gratis at his office, and patients with very moderate means for what they can afford to pay, however small the fee. Thus will his professional self-respect be retained. Then will his charity be true charity and his consideration will be rewarded by the gratitude of patients not yet calloused by beggary nor debased by imposture. In this quiet way some inroads could be made upon this great injustice to the profession and evil to the community. The more sweeping measure, as has been previously suggested in the NEWS, would be to cut off the revenue of the dispensaries by withholding city aid, and make it an illegal act for any dispensary to accept money from a patient.

ECHOES AND NEWS.

The Louisiana State Board of Health.—This Board has announced that it will supply antidiphtheritic serum to poor patients free of cost.

The Willard Parker State Hospital.—William L. Russell of Bay Shore has been appointed first assistant physician in the Willard Parker State Hospital at a salary of $2000.

A Nurses' Home in Worcester, Mass.—Mr. Edward C. Thayer, of Keene, N. H., has offered to erect, at an expense of not less than $35,000, a home for the nurses employed in the City Hospital in Worcester, Mass.

Fined in Philadelphia for Expectorating.—One passenger has been arrested and fined $5 in Philadelphia for persistently spitting on the floor of a street car in that city, though requested by the conductor several times to cease doing so.

Concentration of Doctors' Offices.—Denver, Col., is to have a building 125 feet long by 50 feet deep and two stories high, to be devoted exclusively to doctors' offices. Twenty physicians can be accommodated, and there will be a common operating-room fitted up in the most approved manner.

The Mecca Pilgrimages.—The Government of India has taken the proper course of forbidding all pilgrimages to Mecca from India for a year. The announcement to this effect was officially made to the recent Sanitary Conference at Venice. The French Government has also prohibited pilgrimages in Algeria and Tunis.

A Remarkable Case of Mercurial Poisoning.—A case is reported from Germany in which a thermometer suspended over a heated stove burst, and the mercury, falling on the hot surface, became vaporized and poisoned two children who were sleeping in the room. They eventually recovered.—*Med. Press.*

The New York School Inspectors.—The 150 medical inspectors of schools have been appointed. Forty-one of the doctors are men who have served on the summer corps. Only three physicians who passed the civil-service examination have declined. One successful man is a negro, who will be assigned to the one school that is devoted exclusively to colored children.

The Hoagland Laboratory.—This *quasi* post-graduate school of Brooklyn announces its annual courses in pathology and bacteriology for the months of April and May. Drs. J. M. Van Cott and E. H. Wilson are the directors in those departments of the Laboratory. Dr. J. H. Raymond, secretary, should receive applications.

Marking of Oysters.—A discussion took place in the House of Commons last week regarding the question of oysters and disease. It was stated that the demand for oysters in England has fallen off by three-fourths. A resolution was introduced declaring that the selling of oysters brought from foreign layings, without declaring their origin at the time of sale and without plainly marking such origin, be a penal offence.

New York Board of Medical Examiners.—Drs. William Warren Potter of Buffalo, Maurice J. Lewis of New York, and William S. Ely of Rochester have been appointed their own successors on the State Board of Medical Examiners, representing the Medical Society of the State of New York. Drs. James Willis Candee of Syracuse, John Mallory Lee of Rochester, and Asa S. Couch of Fredonia were similarly reappointed on the board representing the Homœopathic Medical Society.

Superintendents of Hospitals for Infectious Diseases.—The old writers had a word of Greek origin which they found convenient as a designation for medical men and nurses who took charge of patients having infective maladies; the original of the term being παράβολος, venturesome. For modern uses it may become convenient to shorten up some of the long-winded designations or titles that are applied to our contagious *confrères*, and term them our parabolanic physicians.

Tuberculosis Among the Negroes.—The South Carolina State Board of Health at its recent meeting decided to issue a circular to all colored teachers explaining the ravages of consumption among the colored population, and showing that the most fruitful cause of the spread of this disease was the habit of expectoration by consumptives on the floors of school buildings and elsewhere. The teachers will be warned and urged to take every precaution possible to prevent the further spread of the disease from this cause.

Mutter Lectureship of the College of Physicians of Philadelphia.—The next course of ten lectures instituted by the late Professor Thomas Dent Mütter, M.D., LL.D., on "Some Point or Points in Surgical Pathology," will be delivered in the winter of 1899–1900 before the College of Physicians of Philadelphia. The compensation is $600. The appointment is open to the profession at large. Applications stating in full the subjects of proposed lectures must be made before October 1, 1897, to Committee on Mütter Museum, John H. Brinton, M.D., Chairman, northeast corner Thirteenth and Locust streets, Philadelphia, Pa.

Charles James Fyfe, M.D.—An English naval surgeon, was killed during the expedition of the British against the bloodthirsty king of Benin. He was surgeon to the "St. George," man-of-war, and was in the act of caring for a wounded officer of marines when he was shot dead by the enemy. He was a young officer, and had been only four years in the service. The *British Medical Journal* does not fail to remind its readers that he and his surgical comrades are rated as "non-combatants"—praised as "brave civilians" when they fall on the field of battle—but are accorded none of that official recognition which they have been for years urging the government to grant.

An Epidemic of Trachoma. — Eastern and Western Prussia, Posen, and Silesia have recently been visited by an epidemic of trachoma, and the cases are very numerous, especially in some districts near the Russian frontier, where the general standard of living is low. The reports of the medical officers of health show that in the district of Johannesburg there are 2343 patients, and in the district of Lyek 3913, of whom 994 are in the town of Lyek, the remainder being in the country. Experts are to be appointed by the Government to travel through the infected districts and to attend the poor in conjunction with the local medical men.—*London Lancet.*

Free Training in Experimental Physiology.—Exceptional opportunities for training in physiology are presented by the Department of Physiology in the Harvard Medical School, Boston, which offers positions for four qualified men without charge. The explanatory circular may be had of Prof. Henry P. Bowditch at the school. Applicants must possess an elementary knowledge of physiology, and a sufficient training in one or more of the biological sciences. The chosen candidates "will give the mornings of the collegiate year to research, and the afternoons to the direction of undergraduate students in experimental physiology, under the supervision of a professor in the department."

A Scandal at Monsignor Kneipp's Water-cure.—According to the *British Medical Journal*, February 29, a scandalous state of things in the management of Pfarrer Kneipp's establishment at Wörishofen has been disclosed by a lawsuit brought against one of the male nurses there by the parents of a former patient. The patient, it appears, was a weak-minded young girl with a leaning to nymphomania. She had previously been placed in an asylum, but her parents had removed her from it and brought her to Kneipp's establishment, "confiding in the sanctity of the place." It seems almost incredible that the night nurse allotted to this poor half-witted creature was a young man; yet such is the fact. For eight or nine nights she was left alone with him, until one night, when he apparently ill-treated her, her screams brought in another male nurse, to whom the first one then resigned his charge. After some months the poor girl left Wörishofen, and in due time gave birth to a child.

A Druggist Prosecuted for Substitution.—Fairchild Bros. & Foster have taken action in the Court of Chancery of New Jersey, against Chas. Holzhauer, a druggist of Newark, for fraudulently dispensing some preparation not Fairchild's, when Fairchild's Essence of Pepsin was specified. These preparations so dispensed and sold as and for Fairchild's Essence of Pepsin differed materially in chemical composition and physical properties from the latter, and also contained salicylic acid. The motion for injunction was granted without any defense on the part of Holzhauer. This action against substitution must receive the cordial endorsement of the entire medical and pharmaceutical profession, and we have reason to believe it is equally satisfactory to all honest druggists. The best class of druggists deplore this evil, and would welcome any general and decisive effort to rid the trade of it, for they realize that this practice is one which is prejudicial to the best interests of the drug trade in every way; and furthermore, the honest druggist naturally recognizes in this practice an illegitimate and fraudulent competition, while the wrong to the physician and the public cannot be overestimated.

An Antivivisectionist.—That eminent scientist and widely recognized authority on the theory, practice, and aim of surgery, Mr. Jerome K. Jerome, is an ardent foe of vivisection. In *To-day*, his own London weekly, he says: "If two phrases occurred to me, one of which would not give offense to the vivisectionists, and of one which would, I should unhesitatingly choose the latter. I do all I can to help to create among the public a growing horror and detestation of vivisection, and of those who support and advocate vivisection." The first sentence is more than a bit shaky as regards the structure of its antithesis, but that is too small a matter to notice, as Mr. Jerome is not quite so eminent as a literary man as he is in the other ways mentioned. What really deserves attention is the mistake he will make by an intentional resort to cruelty to vivisectionists. Can he not see that the shrieks and quiverings of creatures, even so abhorrent as they, will grievously shock some observers and irremediably brutalize many others? Whether he hurts them with a scalpel or his grammar the result will be the same, and he will hinder, not advance, the good cause to which he is devoted.—*N. Y. Times.*

The Bubonic Bacillus in America.—The bacillus of the bubonic plague has been subjected to experimental examination by Dr. E. H. Wilson, Chief of the Bureau of Bacteriology in the Brooklyn Health Department. The practical purpose of the study was to see what should be done to protect this port from infection through goods imported from India, but the scientific value of the results consists in the addition to the limited information among scientists as to the nature of the bacillus. Conclusions: (1) The thermal death point of this organism is one or two degrees higher than that of the majority of pathogenic bacteria of the non-aperulating variety. (2) Differing widely from cholera, sunlight and desiccation cannot be relied upon to limit the viability of this bacillus under commercial circumstances. (3) Rags, mails, ballast, and general merchandise coming from infected ports should be subjected at either the port of departure or the port of entry to a thorough system of disinfection. Experiments in regard to the effects of chemical disinfectants have been made in the laboratory only with carbolic acid. It has been found that an exposure for two hours to a one-per-cent. solution of carbolic acid sufficed to destroy the life of the bacillus.

The Academy of Medicine and the New Charter.—At the meeting of the Academy of Medicine the report of the committee appointed to investigate the subject of the Health Department in the charter of the Greater New York was presented. It is signed by Drs. Edward G. Janeway, President of the Academy; Stephen Smith, Joseph D. Bryant. George G. Wheelock, and Prince A. Morrow, secretary. The report said, the committee was not inclined to advise a change in the charter in regard to extraordinary powers, which were sometimes necessary. Should occasion arise, public opinion would take from the board its authority. Moreover, the Academy should and would be the first to demand such action. The committee suggested only such changes as relate to the discrimination made against physicians in the appointment of the President of the Board of Health and the abolition of the Coroner's office in favor of a modification of the Massachusetts system. They asked that the Board of Health consist of three Commissioners, appointed by the Mayor, two of whom shall be practicing physicians of not less than ten years' standing; that the third Commissioner be a reputable citizen; that the Health Officer of the Port be *ex officio* a member. Some opposition was made to immediate adoption, and the report went over until the next meeting.

Obituary.—Dr. Clark Wright died March 16th at his home in New York, in the thirty-eighth year of his age. Dr. Wright, son of the late Dr. Clark Wright, was born in this city, and was graduated from Yale College. He studied medicine at the College of Physicians and Surgeons of New York, and completed his studies in London and Germany, remaining abroad several years. He was connected with the Roosevelt Hospital Out-Patient Clinic, and had established a considerable practice. He leaves a wife and one little daughter.—Dr. Arnold Scott of Philadelphia, aged sixty-nine years, died March 18th, on a street car, of heart failure. He was born in Wetzler, Germany, and his ancestors were associated closely with the historic characters of the empire. As lieutenant he served with distinction in the rebellion of 1848, when Southern Germany struggled for supremacy against the Northern States. He studied medicine in Germany and came to this country in 1866.—Dr. Abel Wares, of Haverhill, Mass., died March 15th, aged sixty-nine years.

He was Grand Treasurer of the Supreme Order of the United Order of the Golden Cross of Massachusetts. He leaves a wife and a son.—Dr. James Etheridge died at Macon, Ga., March 14th, just as the surgeons were about to operate on him. They examined him before he was placed on the table, and they decided that he could take an anesthetic. Almost at the very instant it was applied he expired. A *post-mortem* showed that death was caused by paralysis. Dr. Etheridge was a prominent physician of Macon.

CORRESPONDENCE.

EXPECTORATION ORDINANCE AT SARANAC LAKE.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: I herewith inclose copy of "Ordinance Concerning Expectoration," adopted by our Board some months ago:

"SECTION 1.—All persons who expectorate in consequence of any disease of the air passages (lungs, throat, mouth, or nose), are positively forbidden to spit or discharge such expectorated matter upon the floor of any house, store, church, schoolhouse, or upon any sidewalk, or in any dooryard, or other place where such matter may be the means of communicating disease to other persons.

"SECTION 2.—Any person who shall violate the first section of this ordinance shall be liable to a penalty not exceeding $5 for the first offence, nor more than $25 for a subsequent offense, which penalty shall be imposed by and at the discretion of the Board of Health.

"NOTE.—Hotels, inns, and boarding-houses should provide suitable cuspidors for the accommodation of their guests. Cuspidors should be thoroughly cleansed and disinfected daily, and should contain a small amount of germicide solution.

"Persons who have occasion to expectorate when on the streets should carry small pieces of cheesecloth, which, after being used, must be preserved, and burned with as little delay as possible. Chinese paper napkins or toilet paper will answer a similar purpose. The casting of any of these aside, after use, where they may affect others, will be regarded as a violation of the ordinance.

"CAUTION.—Handkerchiefs should never be used to receive expectorated matter. If so used, they must be boiled, or soaked in a germicide solution, with as little delay as possible, and never be put with other articles to be laundried."

This ordinance is vigorously sustained by our people. Of course, with newcomers we have to do missionary work, but a notice usually brings the transgressors to a sense of duty, with a promise to obey in future.

Your recent editorial and reference to Dr. Trudeau's work was admirable and very gratifying to us here. This is a great work of education. Nothing can be accomplished except by persistent and untiring work.

Yours very truly,
E. S. MCCLELLAN,
Pres. Board of Health.

SARANAC LAKE, N.Y.,
March 18, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

THE WIDAL-GRUNBAUM SERUM-TEST BY THE BOARD OF HEALTH—ANTISTREPTOCOCCIC SERUM IN SEPTIC CONDITIONS—MEETING OF THE SECTION IN GENERAL MEDICINE OF THE COLLEGE OF PHYSICIANS—FOOD AND DRINK ADULTERATION—NEW SITE FOR THE MUNICIPAL HOSPITAL—DR. S. WEIR MITCHELL—POPULAR LECTURES AT THE POLYCLINIC.

PHILADELPHIA, March 20, 1897.

IN order to test the practical usefulness of the Widal-Grünbaum serum test in cases of enteric fever, the Philadelphia Board of Health has offered the services of the Bacteriologic Laboratory to examine and report on samples of dried blood from suspected cases of this disease received from the physicians of this city. A circular letter to this effect, together with a card of instructions and outfit for collecting the blood sample, was sent to the profession generally on the nineteenth instant. In view of the fact that the test is still in an experimental stage, explicit information is desired from those sending samples as to the course of the disease, as well as to any discrepancy between the result of the laboratory diagnosis and the clinical aspects of the case in question.

The treatment of septic conditions by the use of antistreptococcic serum was thoroughly discussed at a meeting of the Section on Gynecology of the College of Physicians devoted to this topic, on the evening of the eighteenth instant. Papers were presented by Dr. Barton C. Hirst, Dr. J. M. Baldy, Dr. G. E. Shoemaker, Dr. R. C. Norris, Dr. E. P. Davis, and Dr. J. B. Shober. Dr. A. C. Abbott, in opening the discussion, traced in an interesting manner the development of serum therapeutics, and outlined the process of manufacture of any given serum for the treatment of a condition due to a given germ. The general attitude of the papers read at this meeting, while not distinctly deprecatory to serum-therapy in septic conditions, left one with the impression that advance must be made both in the preparation of the serum and in our understanding of the cases in which its employment is indicated, before its value as a therapeutic agent should be accepted.

At a meeting of the Section on General Medicine of the College of Physicians, held on the sixteenth instant, Dr. S. S. Kneass exhibited a stained specimen of the serum reaction in enteric fever, and read an instructive paper on this subject, detailing a number of instances in which he had applied the test. Dr. Alfred Stengel, in the discussion which ensued, spoke of a case in which the diagnosis lay between acute miliary tuberculosis and enteric fever, and which gave a negative reaction with the serum test. The negative value of the test was later substantiated in this instance by the *post-mortem* finding of miliary tuberculosis. Another valuable communication read at this meeting was a study of anomalies of the kidney, by Dr. J. C. Wilson, who also showed several specimens illustrating his paper, and exhibited a case bearing upon the subject.

According to the recent report of the chemist of the Health Board, Mr. William C. Robinson, extensive adulteration is being practised with regard to many brands of tinned goods now on the market, which, even if not of a distinctly poisonous character, must at least be considered to contain substances of a deleterious nature. To those who favor a certain widely heralded and popular make of beer it may also be a matter of some interest to recollect that with their favorite beverage they likewise consume a not inconsiderable quantity of hydrofluoric acid, added to the beer to prevent fermentation other than alcoholic. Apropos of the latter, a rigid and systematic drink inspection is recommended in the future. Another official report of interest to medical men is that of the Chief Milk Inspector of the city, Mr. Byrnes, who vigorously condemns the custom of serving bottled milk and cream to consumers by the dealers. Bottled milk, he contends, is the best medium by which the germs of such diseases as diphtheria and scarlet fever may be disseminated, and, inasmuch as many of these bottles must find their way into infected dwellings, and are even in some instances taken into the sick-room itself, the custom probably accounts for not a few of the obscure cases of infectious diseases, for which no apparent cause seems to exist.

The absurd proposition, fostered by the committeemen in charge of the subject, to build the new Municipal Hospital on a patch of malarious swamp land fronting the Delaware river, on the outskirts of the city, has fortunately been defeated by the action of the City Council in the matter, so that for the present, at least, there is but little likelihood that this institution will be relegated to the marshes—a location which it would seem was considered by those charged with the duty of selecting a new site for the hospital as quite in keeping with the infectious character of the cases to be treated in the projected hospital. It has been aptly remarked that, in event of the City Council accepting the recommendations of the "Swamp Committee," it would be the plain duty of the Board of Health to promptly board up the new hospital as soon as it was built, and to forbid the reception of patients; and, viewed from the Board's sanitary standpoint, this is precisely the action they might be expected to take.

Dr. S. Weir Mitchell, who has recently sailed for Europe, expects to remain away until the late fall. He will spend some time on the Continent, returning to spend the autumn in the Scottish Highlands, where he has taken a country house. His return is looked for in the latter part of October.

A course of seven lectures on topics of popular interest is announced by the faculty of the Philadelphia Polyclinic. The lectures will be delivered in the college amphitheater, the subjects being as follows: March 24, "Prevention of Consumption and Care of Consumptives," by Dr. S. Solis Cohen; March 26, "Hygiene and the Laws of Health," by Dr. Henry Leffman; March 31, "Surgical Emergencies," by Dr. Thomas S. K. Morton; April 2, "The Roentgen-Ray Apparatus and Skiagraph," by Dr. Max J. Stern; April 7, "The Nursing of Fevers," by Dr. Judson Daland; April 9, "Developmental Needs of Children," by Dr. J. Madison Taylor; April 14, "Mother and Child," by Dr. Edward P. Davis. As this series of lectures is intended for popular instruction on medical topics, admission will be free, and the general public is invited to attend.

OUR PARIS LETTER.

[From our Special Correspondent.]

THE PATHOLOGY OF MORVAN'S DISEASE—RANVIER'S STUDIES ON THE CICATRIZATION OF WOUNDS—FRANCK'S OBSERVATIONS ON THE RESULTS OF COMPRESSION OF THE HEART—THE EFFECTS OF POISONS ON THE HEART AND BLOOD-VESSELS—SCIENTIFIC DEMONSTRATIONS POORLY ATTENDED BY THE PROFESSION IN PARIS.

PARIS, February 24, 1897.

At the *séance* of the Société Médicale des Hopitaux de Paris on February 12th, Marinesco and Jeanselme presented a very interesting contribution to the study of that much-discussed question, the pathology of Morvan's disease. Following the lead of Charcot, it has been the custom here, until quite recently, to regard the disease always as an abortive, incomplete, atypical form of syringomyelia. In the East, especially at Constantinople, the similarity of the symptoms ascribed to Morvan's disease, especially its completely anesthetic mutilating panaris, and the fact that Morvan, in a country district of less than 50,000 inhabitants, found some fourteen cases of it to describe, led them to suspect indigenous but deteriorated forms of leprosy. There where leprosy is so common and its varying characters so familiar, the thought does not seem so strange as it would farther West. Not long ago, Zambuca of Constantinople, found, in what was symptomatically a typical case of Morvan's disease, the cavity in the cord that would be expected in syringomyelia, but he found, in addition, in the broken-down material of the cavity Hansen's lepra bacillus. This attracted a great deal of attention here, and even led to some doubts as to the etiology of even the more typical cases of syringomyelia.

Marinesco reported the careful autopsy of a typical case of Morvan's disease on which Charcot, in 1890, based one of his clinics, while Jeanselme reported the necropsies of two cases of the disease made in Bretagne, where Morvan's original study of the disease was made. Marinesco found the usual lesion of syringomyelia, a cavity in the cord, more or less triangular in shape, in this case, and extending from the sixth cervical to the sixth dorsal roots. The part involved was almost entirely the left posterior horn, the anterior horn being left almost completely intact. The interesting aspect of the pathologic anatomy for Marinesco lies in the fact that lesions of the left posterior horn should give the trophic troubles incident to Morvan's disease, localized entirely in the left hand. The inference is that the medullary lesions of Morvan's disease have their seat in the posterior horns, and that it is here as a consequence that the trophic centers for the integumental and skeletal tissues of the extremities are to be found. A careful bacteriologic investigation did not disclose the presence of bacilli. The cavity in the cord was, as is usual in syringomyelia, the result of a gliomatosis of the periendyma, the process starting seemingly in the canal and spreading to the posterior horns.

Jeanselme reported that he had not been able to find bacilli in the anesthetic spots either over- or under-pigmented, as they occur in Bretagne, the home of the disease. As Hansen's bacillus is not often found in the trophic lesions of leprosy, however, Jeanselme did not consider that he could base any satisfactory conclusion on his negative results.

I spoke some weeks ago of Ranvier's studies on cicatrization of wounds of the cornea, especially of healing by first intention. With the further development of the subject, Ranvier announces his theory that healing of cutaneous wounds, where suppuration does not intervene, is accomplished by a similar process to that in the cornea. Epithelial cells from the upper cutaneous layers, surrounded by agglutinative material, are forced out partly by the mechanical contraction of the cut tissues, and serve to bridge over in a few hours the gap made by the wound. This new material, if undisturbed, gradually acquires the character of cicatricial tissue though not to the extent that is observed, when, after suppurative or other disturbing processes, there is a real formation of new connective-tissue. In the demonstration of repair of wounds in the cornea, Ranvier shows a set of slides where, with the processes of repair nearly completed, there are scattered here and there in the immediate neighborhood of the wound little islets made up of epithelial cells—the epithelial whorls that are usually said to be so characteristic of epithelioma. Ranvier frankly states that, as for himself, given some of these slides and asked to make a diagnosis of the case from which they were taken, he would almost inevitably conclude that there was present an epitheliomatous process. The microscopic diagnosis of epithelioma, especially in the serious cases of suspected utero-cervical epitheliomata, has been difficult enough without having to face the possibility that surgical manipulations intended to be depletory may have led to the production of cicatrical appearances, that even in perfectly benign cases may simulate all the appearances of malignancy.

On Saturday, February 13th, Professor Francois Franck gave at the Charité, by invitation of Professor Potain, a demonstration of the results of his recent observations on the accidents caused by compression of the heart in the pericardium. In pericardial effusion it is the pressure of the effusion upon the auricles that determines death in the fatal cases. As soon as the pressure of the effusion confined within the pericardium exceeds the venous blood-pressure tending to drive the blood into the auricles, death is inevitable. Three external factors delay the fatal result in practice: (1) As the pressure increases upon the auricles blood accumulates in the veins, venous blood-pressure rises, and the counter pressure is overcome for a time at least; (2) thoracic aspiration, even when only normal, tends to relieve, at certain phases of respiration, the pressure exerted upon the auricles by the effusion, and aids the venous blood-pressure to overcome it; (3) when dyspnea supervenes, thoracic aspiration becomes more pronounced, because of the bringing into play of the supplementary muscles of respiration, and with the deeper respirations there is relief of the counter pressure upon the auricles. In some of his experiments, Franck has obtained very perfect specimens of the pulsus paradoxus. The whole subject is very interesting, as showing the intimate relations between cardiac activity and respiration, and demonstrating that the phenomena of dyspnea, though occasioned by maloxydation of the blood, are not by any means merely the symptoms of a morbid process, but are also nature's compensatory media for helping out a laboring heart.

Professor Franck is giving at the College de France a series of demonstrations of the effects of poisons upon the heart and blood-vessels. His recent demonstrations that the action of the systolic poisons, digitalin and strophanthin, was similar to that produced by direct electric or mechanical stimulation of the myocardium, was a very convincing bit of physiologic therapeutics. There would seem to be no room left for doubt, after seeing the very similar effects produced, that digitalin was a very powerful, direct, cardiac-muscle stimulant. Quite recently, at the end of one of his demonstrations, the heart of an animal exposed for the demonstration stopped beating under the influence of a large dose of chloral. It is just the condition of affairs that occurs in the sudden cardiac accidents of chloral or chloroform, only here there was every assurance that the heart was not merely beating very slightly, but was absolutely stopped. For over two minutes no attempt was made to resuscitate it; then regularly repeated electrical stimulation was tried. After some minutes the heart took up its work for itself once more, and life went on. One cannot help but wonder if the application of electricity will not yet come to the relief of the dread cardiac accidents of anesthesia.

An American medical student cannot help but think that if series of demonstrations, such as one sees with Ranvier and Franck and Henneguy, at the College de France, were being given in a crowded medical center in the United States they would be better attended than they are here. Not more than a dozen people, sometimes even less, go to such demonstrations here, with 5000 medical students and an overcrowded medical profession in Paris. Curiosity, rather than scientific interest, seems to attract people. Just across the hall from Franck's lecture-room a series of lectures are being given on "Realism in Modern French Literature," and the lecture-room is so overcrowded that to get a seat one must go nearly an hour beforehand. The only one of the medical lecturers at the College de France whose lessons are well attended is Janney, who is lecturing on "Experimental Psychology." As his lectures include observations on hysteria and suggestibility, and are illustrated at certain times by patients at the Salpétriére, they attract a good deal of attention from non-medical people.

Here in Paris, as everywhere else, the dread of overhanging examinations, more and more specialized and extended, keeps the medical student effectually in the narrow road of direct preparation for the answering of questions. Except for anatomy, the quiz system practically does not exist, so that a French medical student has more chances of drawing his medical inspiration from the lips of a master in the art, rather than from a quiz master. But it seems too bad that the broadening influence, inevitably the result of contact with the makers of science, should not have chance to exert its sway, because of the haunting dread of examinations to come. They were once meant to show how much the student knows; they have become the reason why he seeks knowledge in certain directions, and the initiative faculty perishes ignobly.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

MUCOUS SEPTICEMIA—THE EFFECT OF DIGITALIN IN ASYSTOLE AND CHEYNE-STOKES' RESPIRATION—EIGHT GRAMS OF QUININ SULFATE WITHOUT DEATH—PALPATION OF THE LUNG THROUGH THE PLEURA.

AT the session of the Academy of Medicine, held February 16th, a communication from **BABES** was read on "Mucous Septicemia." This disease, as described by him, is characterized by a facial paralysis, anemia, a light fever, and progressive weakness, terminating in death. The disease is an infection of the blood by a mucin-producing microbe, which, either as the result of a special faculty, or because of favorable conditions, is able to bring about a mucoid transformation of the blood during life. Babes was unable to produce this transformation in the blood of animals experimented upon, although the germ is pathogenic for animals as well as for man.

MERKLEN read a paper before the Medical Society of the Hospitals, February 12th, on asystole and Cheyne-Stokes' respiration. He had the care of two patients suffering from arterio-sclerosis, with attacks of asystole, due to chronic myocarditis. In one of these patients Cheyne-Stokes' respiration came on suddenly twenty-four hours after the administration of one-fifteenth of a grain of crystalized digitalin. Death followed some hours later. The other patient recovered, though asystole and Cheyne-Stokes' respiration continued for six weeks, and appeared to be increased by the digitalin, but was considerably improved by hypodermic injections of morphin, which seemed to neutralize the effects of the digitalin, calming the anxiety and restlessness of the patient and regulating, apparently, the respiration.

GUINON related an instance in which a man, with suicidal intent, took *eight grams, about 120 grains, of quinin sulfate.* There was a profound collapse, with cold extremities, complete deafness, and blindness. The patient recovered.

COMBY reported that there were treated during 1896, at the Trousseau Hospital, 500 cases of scarlet fever, of ages from ten months to fourteen and one-half years. The mortality was 11.6 per cent., or, deducting fifteen cases which were transferred from the diphtheria ward, the mortality was 8.8 per cent.

At the session of the Surgical Society, held February 17th, **LEJARS** reported two cases of the *stripping up of the pleura.* One patient was fifty years of age, and suffered from pulmonary gangrene. Over this area, as determined by auscultation and percussion, about eight centimeters (three and a half inches) of the fourth, fifth, and sixth ribs were resected. The costal pleura was without difficulty separated for a distance of a finger's length, and through this loosened pleura an area of induration could be made out in the lung. A small incision was made, the finger introduced, and by direct palpation it was ascertained that in the center of the indurated area there was a cavity filled with a bloody, putrid fluid. The lung was drawn up close to the wound and fastened in this position; pneumothorax was thus avoided. The gangrenous focus was evacuated. The patient failed rapidly, and at the autopsy presented bilateral sclerotic kidneys.

In the other case, one of gangrene of the lung, secondary to pneumonia, localized in the lower lobe of the right lung, in a patient aged thirty-three, the eighth, ninth, and tenth ribs were resected for about seven centimeters (two and three-quarter inches), and the costal pleura was separated as far up as was possible. Palpation did not reveal a distinct area of induration, and the pleura, which was adherent at this point, was incised. Intrapleural examination by the finger also failed to find a focus. The parenchyma of the lung was incised for a distance of five or six centimeters, but nothing was found. The patient died in a short time. At autopsy the gangrenous focus was found to be in the superior lobe.

ROUTIER operated upon a patient for localized empyema, resecting about ten centimeters of one rib. The pleura was stripped up, and through it a transpleural examination was made, but no information was gained. A small incision was made into the pleura and, as no focus of pus was found, the incision was prolonged and the surface of the lung inspected. Upon a line which seemed to mark the interlobular fissure, a needle was thrust in and drew pus. This was then opened and about a quart of pus evacuated. The patient recovered.

Routier described a kidney which he had removed on account of repeated unilateral hematuria. At first examination, the kidney appeared absolutely normal, but at the apex of one of the calices there was a small ulceration, which microscopical examination showed to be tubercular, and which had eroded a minute arterial branch.

Vienna.

RECOVERY FROM OSTEOMALACIA—A NEW STETHOSCOPE MADE ON THE PRINCIPLE OF THE DRUM—RELATIVE VALUE OF IODOTHYRIN AND TABLETS MADE FROM THE THYROID GLAND.

LATZKO presented before the Vienna Medical Club, February 10th, a woman who, in the sixth month of pregnancy, exhibited the symptoms of osteomalacia. She was treated with phosphorus, without effect, and it was finally deemed necessary to produce miscarriage. After labor, the bones again became solid, but the pelvic diameters were decreased to such an extent that it will be impossible for her to be delivered of a full-term child except by Cæsarian section.

At the session of the Imperio-Royal Society of Physicians, held February 19th, **BASCH** exhibited a stethoscope designed by himself and constructed on the principle of a Marruy's drum. The diaphragm is a thin sheet of rubber, which is protected by a rubber cloth. The instrument is superior to the phonendoscope. The sounds are not only increased, while their character is in no wise altered, but the analysis of the various acoustic phenomena is simplified. With this instrument the intestinal sounds and motions may be readily followed. It is also well adapted for the sounds of the fetal heart.

SCHIFF described experiments he had made to determine the quantitative value of iodothyrin and tablets made from the thyroid gland. It has been established that iodothyrin nas qualitatively the same effect as the thyroid tablets, but, as the result of the tests made upon four patients with three separate packages of iodothyrin and one of thyroid tablets, Schiff concludes that there is no quantitative equivalence between iodothyrin and the gland substance. Either all of the active principles of the gland do not unite with iodin, or else the iodin preparations lose their power in the course of time.

It was also brought out that different packages of iodothyrin are different in therapeutic force, so that the substitution of this new drug for the thyroid tablets is not recommended.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE—SECTION ON ORTHOPEDIC SURGERY.

Stated Meeting held February 19, 1897.

A. B. JUDSON, M.D., Chairman.

SAMUEL KETCH, M.D., read the paper of the evening, entitled;

"REMARKS ON THE ORTHOPEDIC TREATMENT OF SPASTIC PARALYSIS IN CHILDREN."

[See page 385.]

DISCUSSION.

DR. FREDERICK PETERSON said that until he had heard the paper, he had known little about the orthopedic measures that are taken for the relief of these conditions. He asked if much can be done for the relief of spastic conditions in adults by means of tenotomies and apparatus. He took exception to the use by orthopedists of the term "irritability" in connection with these conditions, and did not think that the exaggerated reflexes which are present could be looked upon as "irritability." Exaggeration is due to the fact that inhibition from the cortex has been cut off—there is no irritability of the spinal cord. He thought this condition might be obviated by the use of the faradic current, which he considered preferable to the galvanic. A great deal of benefit will result from pedagogy, or education of the muscles by efforts of the will. Results of considerable benefit have been obtained from active instead of passive movements; as, for example, using the typewriter or playing the piano in the case of a paralyzed hand.

DR. WILLIAM LESZYNSKY said that in his experience no benefit whatever has been obtained from the use of electricity in these cases, but that much improvement resulted from efforts of the will and persistent manipulation of the limb. For instance, in a child with paralyzed limbs, the efforts made to walk are sometimes sufficient to restore the function of the muscles. In some of these cases of cerebral palsy, of course, but little can be done. It seemed to him that most of these cases are seen among the poorer classes. The better class do not allow their children to go so long without treatment, and the disease is not allowed to produce such marked deformities.

DR. REGINALD SAYRE said that to prevent these deformities treatment would have to be directed to removal of the lesion in the cord, which was a very difficult thing to do. He had seen many of these cases in the higher walks of life, and had found them just as intractable as those occurring among the poor.

He confirmed all the points which Dr. Ketch had brought up in the paper in regard to the results obtained from myotomies and tenotomies and the use of apparatus, but did not agree with him as to the employment of faradism.

DR. V. P. GIBNEY asked Dr. Leszynsky how he thought the deformities of spastic paralysis could be prevented.

DR. LESZYNSKY replied that patients of the well-to-do class do not get into such a bad condition as do those among the poor, because they seek treatment at an earlier stage. He thought that if a deformity had existed for years, there would be changes in the bone or joint, and believed he was right in considering such deformities difficult to rectify.

DR. H. L. TAYLOR asked the author to make more clear the indications for treatment in the different stages of these paralyses. He thought this class of cases owe a debt of gratitude to Dr. Bradford of Boston and to Dr. Gibney of this city, because of the benefit which has been derived from the combined use of braces and tenotomies as practised by them. In most of these cases there is a condition of contracture which is not easy to control by braces; *i.e.*, the deformity will return when the brace is removed. Tenotomy not only makes it possible to retain the foot in position, but has a decided effect upon the spasm. The tendon is cut for the specific purpose of relieving the spasm, and this point has been made clear by the surgeons mentioned. He thought the author had not sufficiently emphasized this fact in his paper. Another point is the very marked mental improvement which follows this mode of treatment. One of his cases was a little girl of six, who was very hard to manage, and who had what her mother called "tantrums." She now goes to a kindergarten, and has had no more "tantrums" since the tenotomy. The speaker said he would treat adults suffering from spastic paralysis in the same manner as he would treat children.

DR. H. W. BERG thought that almost all of these cases of spastic paralysis require a diagnosis as to their causation before any mode of treatment can be decided upon. Many of these cases accompany congenital idiocy, and in these pedagogy of the muscles will most aptly apply. The sense of sight should be developed by bright colors, that of hearing by the use of bells; at the same time the muscles should be developed to produce motor functions by making the child go through certain motions a given number of times, and repeat this until he learns how to do it. Good results can be obtained in this way after years of patient toil. Another class of cases results from meningeal hemorrhage during birth or at an early period of life, which destroys the motor area in the cortex, and results in degeneration of the cord. In such cases, education of the muscles is love's labor lost. These are the cases that do best under tenotomy. After a large experience in treating these cases with electricity, he was rather in favor of galvanism.

DR. N. M. SHAFFER said that a large number of these cases came under his observation both in hospital and private practice, and he had found that after a time the contraction becomes a contracture which is absolutely rigid, and yet, as time goes on, a radical change for the better will take place without any operative measures whatever. There is also improvement in the mental condition. He believed that this was due to the changes which take place in the body every seven years, and for this reason he often waited two or three years before operating. He ordered passive exercise to be kept up half an honr or an hour each day, and, so long as approximately normal movements can be gotten, did not think tenotomy necessary. Results obtained in this way are better than when tenotomy is done in the spastic stage. He had seen an elongated tendo-Achilles follow tenotomy done in the spastic stage, and this caused disability as great or greater than that which existed before the operation. It is also important that an apparatus be worn after tenotomy, in order to retain the limb in proper position.

DR. PETERSON remarked, in regard to improvement in the normal condition which Dr. Shaffer said often occurred when a radical change took place in these cases, that he thought this was merely a coincidence. In referring to the connection between these palsies and idiocy, Dr. Berg had spoken as if the paralysis was due to idiocy. The different degrees of idiocy and palsy, as well as epilepsy, are symptoms of cerebral injury received during parturition or within the first two or three years of life. Idiocy is a symptom which is found in fully fifty per cent. of all cases of spastic paralysis in children. Education of the muscles applies to all cases whether idiocy is present or not, and improvement in the mental condition often results from certain forms of pedagogy of the muscles. In regard to the use of electricity, he said that he did not see any advantage to be obtained from galvanism, and it often irritates the delicate skin of a child. The little patients soon become accustomed to faradism and rather like it.

DR. SHAFFER said that he scarcely thought the changes he had referred to are tissue changes. In one of his cases there was a change in the direction of the gastrocnemius, and he thought this might be due to the pathological condition instead of a change in the muscle tissue.

DR. BERG asked Dr. Peterson if he understood him to say that he considered every one of these cases as being due to meningeal hemorrhage. In some of these cases, was there not simply a lack of development of the motor centers or motor tracts? If so, he thought the treatment of the latter cases should differ materially from that employed in those cases where the paralysis is due to cerebral hemorrhage.

DR. PETERSON said that spastic paralysis, in a large majority of cases is due to meningeal hemorrhage, and that there are few cases where deficient development of the brain is found *post-mortem*. Atrophy, sclerosis, and cysts, are found in idiots.

DR. KETCH, in closing, said that his remarks were purely clinical, and that he had purposely left out anything that referred to the etiology of the condition. Dr. Peterson had objected to his use of the word "irritability." As most of the cases exhibit a general condition of irritability, described as "tantrums" by Dr. Taylor, he thought the term well applied. He had been asked to make clear the indication for tenotomy. A great degree of spasm would be to him an indication for the non-performance of tenotomy at that time. He believed with Dr. Shaffer that we should wait until the stage of contracture before operating. Each case should be studied individually, and the treatment governed by the amount of spasm and irritability. He could give no satisfactory reason for the mental improvement which takes place in some of these cases, but thought it might be the natural result of time.

SPECIMEN SHOWING "SECONDARY POTT'S DISEASE WITH COMPRESSION OF THE CAUDA EQUINA, FOLLOWING EMPYEMA."

DR. GEORGE T. ELLIOTT presented a specimen from a man, twenty-eight years of age, who had tubercular involvement of both lungs and purulent exudation into the right pleural cavity. Slight lumbar kyphosis appeared later, with partial motor paralysis of the lower extremities and pain and knee-jerks which varied with the position of the patient. While the patient lay on the right side, the pain ceased and the knee-jerks appeared, the latter disappearing when he lay on the left side or back. At the autopsy the right pleural cavity was found filled with pus. An extradural sinus extended from the tenth dorsal vertebra, where it communicated with the right pleural cavity, to the second lumbar vertebra. The tenth vertebra was carious and the fourth and fifth lumbar softened, with a small abscess cavity separated from the cauda equina by an area of pachymeningitis externa caseosa. The ventral surface of the dura was intact. The extradural sinus rested upon this caseous mass and did not mix its contents with those of the extrapachymeningitic abscess cavity. There was no microscopic degeneration of the cord. The points of interest are as follows: (1) Entrance of pus from pleural cavity into vertebral canal, the usual order reversed. (2) Dual secondary involvement of vertebral column. (3) Compression symptoms varying as the patient changed his position, and with a varying quantity of pus in the epidural canal which communicated with the pleural cavity containing pus.

The patient had had lung trouble before any symptoms of vertebral caries appeared. The speaker could not say whether or not any attempt had been made during life to evacuate the pus in the pleural cavity.

REVIEWS.

THE PRACTICE OF MEDICINE. By HORATIO C. WOOD, A.M., M.D., LL.D. (Yale), Professor of Therapeutics and Clinical Professor of Nervous Diseases in the University of Pennsylvania, etc., and REGINALD H. FITZ, A.M., M.D., Hersey Professor of the Theory and Practice of Physic in Harvard University, etc. Philadelphia: J. B. Lippincott Co., 1897.

THE authors state in their preface that this work is the "outcome of an attempt to view the practice of medicine simultaneously from the pathologic and therapeutic points of view," and there are few who, having read the book, will not admit that the attempt has been successful. Wood's eminence, his preëminence, in fact, as a therapeutic teacher, enables him to speak authoritatively on the treatment of disease, and all the therapeutics of the book have been written by him. Fitz's reputation as a pathologist renders the reading of the morbid anatomy of each chapter clear, and it is evident that, concerning most of the conditions, he has seen many examples.

The book begins with a full chapter on the diseases of the blood and of the ductless glands. The thyroid extract is heartily commended in cases of goiter and myxedema, but no reference is made to the recent discovery of the presence of iodin in the thyroid gland, which probably accounts for the benefits derived from this variety of animal extract in the proper cases. The locomotor and constitutional diseases, and the infectious diseases, are next discussed. The section on tuberculosis is especially well arranged and splendidly treated. The authors do not specifically recommend the injection of tuberculin, though they state that it is viewed with favor by some writers. The antitoxin treatment of diphtheria is urged "whenever the clinical features of the case warrant the diagnosis of diphtheria." The writers properly point out the difficulties of securing perfect results when the infection is a mixed one. No mention is made of the use of the antistreptococcus serum in cases of pyemia aud septicemia.

A chapter on "Animal Parasites," very complete and instructive, is followed by one on "Acute and Chronic Poisoning," which is a valuable element in the book. The "Diseases of the Nervous System" occupy the next 240 pages. In the treatment of this subject Wood has left nothing to be desired, though it is a little surprising that he has not referred to Quinche's lumbar puncture as a diagnostic measure.

The succeeding sections are devoted to the diseases of the circulatory apparatus, of the digestive apparatus, and of the peritoneum. The Charcot-Leyden crystals of asthma are spoken of as Charcot crystals. Under the diseases of the lungs tuberculosis is not described, being fully treated in the chapter on infectious diseases. Although the technic of staining and preparing microörganisms belongs, perhaps, more properly to works on diagnosis, a description of them would not be out of place in a book on practice so voluminous as this.

One turns naturally with some eagerness to the discussion of appendicitis in this work, since Fitz was the originator of the term and the first one to describe fully the morbid anatomy of the process. His original observations still stand as classical descriptions of the various forms of the process. The authors recommend surgical reatment of appendicitis when the symptoms point to a perforation; when sixty hours of treatment shows no abatement of the symptoms; and "when a sudden increase in the local and general symptoms points toward the occurrence of perforation or the formation of pus." Operation in the interval of attacks is recommended, Wood preferring to have the appendix removed directly after the recovery of a second attack. Fitz advises removal in cases in which recurrences are frequent or the tendency to relapse is such as to produce a state of semi-invalidism.

The last section of the book is devoted to the diseases of the kidneys, with a full consideration of abnormalities of the urine. A formulary of twenty-eight prescriptions and a number of temperature charts are appended to the work. The index is quite complete.

On the whole, this latest addition may be cordially recommended as a text-book of medicine, it being a recent, full, and authentic exposition of the subject. The standing of its authors can be but enhanced by this publication.

The only objection to be made to the work of the publisher lies in the inferior quality of the paper.

THE EYE AND ITS CARE. By FRANK ALLPORT, M.D., Professor of Clinical Ophthalmology and Otology in the Minnesota State University, etc. Philadelphia: J. B. Lippincott Co. 1896.

This little volume of 172 pages is devoted to a consideration of the anatomy, physiology, and hygiene of the eye, presented in an elementary, popular style. No attempt at originality is claimed. The book is well printed, fully illustrated and attractively bound. The non-medical student who thirsts for a little knowledge of the eye will find this work of value.

THE PRINCIPLES OF THEORETICAL CHEMISTRY, WITH SPECIAL REFERENCE TO THE CONSTITUTION OF CHEMICAL COMPOUNDS. By IRA REMSEN, Professor of Chemistry in the Johns Hopkins University. Fifth edition. Philadelphia and New York: Lea Brothers & Co. Pp. X to 326. 1897.

AS the author states in the preface, this new edition has been prepared on the lines of the preceding ones, his object being "to help students to get clear ideas in regard to the foundation of chemistry." This little work states in brief all that is known of the modern theories of chemistry, with a sketch of their development. It especially points out the value of the work of Lavoisier in putting us in a position to investigate the laws of chemical change, making chemistry more of an exact science than it had previously been.

The molecular theory is then fully discussed, and the value of the periodic law, as a means of classification of the elements, is pointed out. The author devotes much space to the constitution of chemical compounds, and the physical methods of their determination; a passing glance being had of stereo-chemistry, and the study of chemical affinity.

On the whole, this little book is worthy of attention by the student of theoretical chemistry and of chemical problems.

ANNOUNCEMENTS.

THE AMERICAN CLIMATOLOGICAL ASSOCIATION.

THE American Climatological Association will hold its fourteenth annual meeting in Washington, D. C., May 4, 5, and 6, 1897.

The sessions will be held daily from 10 A.M. until 1 P.M. in the Columbian University Building.

The general sessions of the Congress will be from 2 until 5 P.M.

The annual dinner of the Association will be held on the evening of May 4th, at the Hotel Normandie.

President, Dr. E. Fletcher Ingals, Chicago.

Secretary and Treasurer, Dr. Guy Hinsdale, Philadelphia.

PRELIMINARY PROGRAM:

"President's address," E. Fletcher Ingals, M.D.

PAPERS.

"Choice of a Summer Residence." F. I. Knight, M.D.

"Mountain Fever." Thomas Darlington, Jr., M.D.

"Renal Disease as Affected by Climate." I. N. Danforth, M.D.

"Climate or Environment as a Factor in the Repair of Neurasthenia and Melancholia." J. Madison Taylor, M.D.

"Nervous Diseases Affected by Climate." Sanger Brown, M.D.

"The Comparative Merits of Resorts in Colorado, New Mexico, and Arizona." S. E. Solly, M.D.

Paper by R. G. Curtin, M.D.

"A Brief Consideration of Some Points in the Management of Consumption." Submitted for discussion. R. H. Babcock, M.D.

"Cases of Pulmonary Tuberculosis with Recovery." John H. Musser, M.D.

"The Clinical Value of the Culture Products of the Bacillus Tuberculosis in Tubercular Affections." Karl von Ruck, M.D.

"Terebinthinates as Remedial Agents." J. B. Walker, M.D.

"Aero- and Hydrotherapeutics in the Prevention and Treatment of Pulmonary Tuberculosis." S. A. Knopf, M.D.

"Infrequency of Pneumonia on the Atlantic coast of Florida." Frank Fremont Smith, M.D.

"Remarks on the Treatment of Tuberculosis by the Antitubercle Serum." Guy Hinsdale, M.D.

"Some Personal Observations upon the Effects of Changes of Climate upon the Health of Men and Animals," R. C. Newton, M.D.

"Dangers of Tubercular Infection and Their Partial Arrest by Climatic Influences." C. F. Gardner, M.D.

"Does the Institution Treatment Promise the More Certain Cure in Pulmonary Tuberculosis?" C. P. Ambler, M.D.

"The Treatment of Gout by Natural Mineral Waters." C. C. Ransom, M.D.

"Report on Mineral Springs." A. C. Peale, M.D.

"The Treatment of Hæmoptysis with the Salicylates." Thomas J. Mays, M.D.

Papers by Thomas D. Coleman, M.D.; C. F. McGahan, M.D.; H. L. Elsner, M.D., and others.

Members should purchase a ticket to Washington with a certificate of purchase. Presentation of this, countersigned by the agent at the Congress, will entitle members to return at one-third the regular fare.

The headquarters of the Association will be at the Hotel Normandie, which has made special rates of from $3 to $3.50 per day.

Members intending to be present at the dinner will advise the Secretary as early as convenient, as it will take place on the evening of the first day.

Abstracts of papers should be forwarded to the Secretary in advance, and all manuscripts given to him as soon as read.

NATIONAL CONFEDERATION OF STATE MEDICAL EXAMINING AND LICENSING BOARDS.

President, Wm. W. Potter, M.D., N. Y. Secretary-Treasurer, A. Walter Suiter, M.D., Herkimer, N. Y.

The seventh annual meeting of this Conferation will be held in the small banquet hall of the Hotel Walton, at Philadelphia, Monday, May 31, 1897, at 10 o'clock, A.M. The following program has been arranged:

1. Address of welcome by A. H. Hulshizer, M.D., of Pennsylvania State Board of Medical Examiners.
2. Response by Vice-President Reed.
3. Report of the Committee on Minimum Standard of Requirements.
4. Discussion and action thereon.
5. Report of the Secretary and Treasurer.
6. Annual address of the President.
7. "Some Practical Experience with, and Results of, the Medical Law of Pennsylvania." Wm. S. Foster, M.D., Pittsburg.
8. "The Need for Exact Information as to the Equipment, Methods, and Requirements of our Medical Schools." J. H. McCormack, M.D., Bowling Green, Ky.
9. Address by Professor J. W. Holland, M.D., Dean Jefferson Medical College, Philadelphia.

The object of the Confederation is to consider questions pertaining to State control in medicine, and to compare methods in vogue in the several States; the collection and dissemination of information relating to medical education, and to consider propositions that have for their purpose advancement of the standards in the United States. A cordial invitation is extended to all members and ex-members of State medical examining boards, and to physicians, sanitarians, and educators who are friendly to the objects named, to attend the meeting and participate in its proceedings.

MEETINGS OF NATIONAL MEDICAL SOCIETIES, 1897.

NAME OF SOCIETY.	PLACE.	TIME.	SECRETARY.	RESIDENCE.
American Academy of Medicine	Philadelphia, Pa	May 29-31	Dr. C. McIntyre	Easton, Pa.
American Academy of Railway Surgeons	Chicago, Ill	Sept	Dr. D. C. Bryant	Omaha, Neb.
American Assoc. Genito-Urinary Surgery	Washington, D. C	May 4-6	Dr. W. K. Otis	New York City.
American Association Obstetrics and Gyn	Niagara Falls, N. Y	Aug. 17-20	Dr. W. W. Potter	Buffalo, N. Y.
American Climatological Association	Washington, D. C	May 4-6	Dr. G. Hinsdale	Philadelphia, Pa.
American Dermatological Association	Washington, D. C	May 4-6	Dr. J. T. Bowen	Boston, Mass.
American Electro-Therapeutical Association	Harrisburg, Pa	Sept. 21-23	Dr. M. Einhorn	New York City.
American Gynecological Society	Washington, D. C	May 4-6	Dr. J. Riddle Goffe	New York City.
American Laryngological Association	Washington, D. C	May 3-7	Dr. H. L. Swain	New Haven, Conn.
American Laryn., Otolog., and Rhin. Society	Washington, D. C	April 30-May 1	Dr. R. C. Myles	New York City.
American Medical Association	Philadelphia, Pa	June 1-4	Dr. W. B. Atkinson	Philadelphia, Pa.
American Neurological Association	Washington, D. C	May 4-6	Dr. G. M. Hammond	New York City.
American Ophthalmic Society	Washington, D. C	May 4-6	Dr. S. B. St. John	Hartford, Conn.
American Orthopedic Association	Washington, D. C	May 18-21	Dr. J. Ridlon	Chicago, Ill.
American Otological Society	Washington, D. C	May 4	Dr. J. J. B. Vermyne	New Bedford, Mass.
American Pediatric Society	Washington, D. C	May 4-6	Dr. F. A. Packard	Philadelphia, Pa.
American Public Health Association	Philadelphia, Pa	Sept	Dr. I. A. Watson	Concord, N. H.
Army and Navy Medical Association	East St. Louis, Ill	May 18	Dr. E. P. Bartlett	Springfield, Ill.
Association of American Physicians	Washington, D. C	May 4-6	Dr. H. Hun	Albany, N. Y.
Association of Military Surgeons of U. S	Columbus, O	May 25-27	Dr. H. Burgin	Philadelphia, Pa.
Canadian Medical Association	Montreal	Aug	Dr. F. N. G. Starr	Toronto.
Mississippi Valley Medical Association	St. Paul, Minn	Oct. 19-22	Dr. H. W. Loeb	St. Louis, Mo.
Medical Society of the Missouri Valley	Lincoln, Neb	March 18	Dr. D. Macrae, Jr	Council Bluffs, Ia.
National Association of Railway Surgeons	Chicago, Ill	May 4-6	Dr. C. D. Wescott	Chicago, Ill.
New England Psychological Society	Waverly, Mass	March	Dr. E. V. Scribner	Worcester, Mass.
Southern Surgical and Gynec. Association	Nashville, Tenn	Nov. 10	Dr. W. E. B. Davis	Birmingham, Ala.
Tri-State Medical Society	St. Louis, Mo	April 6-8	Dr. G. W. Cale	St. Louis, Mo.
Western Ophthal., Laryn., and Rhin. Assoc	St. Louis, Mo	April 8-9	Dr. H. Foster	Kansas City, Mo.
Western Surgical and Gynec. Association	Denver, Col	Dec. 28-29	Dr. H. E. Pearse	Kansas City, Mo.

MEETINGS OF STATE MEDICAL SOCIETIES, 1897.

STATE.	PLACE.	TIME.	SECRETARY.	RESIDENCE.
Alabama	Selma	April 20-23	Dr. J. R. Jordan	Montgomery.
Arkansas	Little Rock	May 12	Dr. F. Visonhaler	Little Rock.
California	San Francisco	April 20-22	Dr. W. W. Kerr	San Francisco.
Colorado	Denver	June 15	Dr. H. B. Whitney	Denver.
Connecticut	Hartford	May 26, 27	Dr. N. E. Wordin	Bridgeport.
Delaware	Rehoboth	June 8	Dr. P. W. Tomlinson	Wilmington.
District of Columbia	Washington	April 6	Dr. J. R. Wellington	Washington.
Florida	Palatka	April 21	Dr. J. D. Fernandez	Jacksonville.
Georgia	Macon	April 21	Dr. R. H. Taylor	Griffin.
Idaho	Boise	Sept. 9, 10	Dr. W. D. Springer	Boise.
Illinois	East St. Louis	May 18	Dr. J. B. Hamilton	Chicago.
Indiana	Terra Haute	May	Dr. F. C. Heath	Indianapolis.
Indian Territory	South McAlester	June 1, 2	Dr. G. J. Rucker	Claremore.
Iowa	Marshalltown	May 19-21	Dr. J. W. Cokenower	Des Moines.
Kentucky	Owensboro	June	Dr. S. Bailey	Stanford.
Louisiana	New Orleans	May 4	Dr. P. B. McCutchon	New Orleans.
Maine	Portland	June 2-4	Dr. C. D. Smith	Portland.
Maryland	Baltimore	April 20-23	Dr. W. G. Townsend	Baltimore.
Massachusetts	Boston	June 8, 9	Dr. F. W. Goss	Roxbury.
Michigan	Grand Rapids	May	Dr. C. H. Johnston	Grand Rapids.
Minnesota	Mankato	June 16-18	Dr. I. Donnelly	St. Paul.
Mississippi	Jackson	April 21	Dr. J. R. Tackett	Meridian.
Missouri	St. Louis	May	Dr. J. N. Jackson	Kansas City.
Montana	Helena	April 8	Dr. W. C. Riddell	Helena.
Nebraska	Lincoln	May 18-20.	Dr. G. H. Simmons	Lincoln.
New Hampshire	Concord	May 24, 25	Dr. G. P. Conn	Concord.
New Jersey	Cape May	June 22	Dr. W. Pierson	Orange.
New York (Assoc.)	New York City	Oct. 12-14	Dr. E. D. Ferguson	Troy.
New Mexico	Albuquerque	May 12	Dr. H. J. Abernethy	Socorro.
North Carolina	Elizabeth	June 8	Dr. R. D. Jewett	Wilmington.
Ohio	Cleveland	May 19-21	Dr. T. Hubbard	Toledo.
Ontario	Toronto	June 2, 3	Dr. J. N. E. Brown	Toronto.
Oregon	Portland	June 8, 9	Dr. W. F. Amos	Portland.
Pennsylvania	Pittsburg	May 18, 19, 20	Dr. W. B. Atkinson	Philadelphia.
Rhode Island	Providence	June 3	Dr. F. L. Day	Providence.
South Carolina	Union	April 22	Dr. W. P. Porcher	Charleston.
South Dakota	Mitchell	June 9	Dr. W. J. Maytum	Alexandria.
Tennessee	Nashville	May 11	Dr. C. R. Atchinson	Nashville.
Texas	Paris	April 27	Dr. H. A. West	Galveston.
Utah	Salt Lake	Oct. 5, 6	Dr. J. N. Harrison	Salt Lake.
Vermont	St. Albans	Oct. 14, 15	Dr. D. C. Hawley	Burlington.
Virginia	Hot Springs	Aug. 31, Sept. 1, 2	Dr. J. F. Winn	Richmond.
Washington	Spokane	May 11, 12	Dr. J. M. Semple	Medical Lake.
West Virginia	Charleston	June	Dr. G. A. Aschman	Wheeling.
Wisconsin	Racine	May 5	Dr. C. S. Sheldon	Madison.

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ORIGINAL ARTICLES.

THE USE OF MODIFIED MILK IN HEALTH AND DISEASE.[1]

BY T. M. ROTCH, M.D.,
OF BOSTON;
PROFESSOR OF DISEASES OF CHILDREN, HARVARD UNIVERSITY.

SUCH great advances have been made in the use of milk as a food during the last few years, and so much interest has arisen among the members of the medical profession regarding this subject, that this would seem an appropriate time to discuss, at least provisionally, the position which milk-feeding holds at the present day. I should like to at once impress upon you as medical scientists, as practical and intelligent physicians, whether you are undertaking to provide for the nutrition of the earlier periods of life, or for the various phases of malassimilation, malnutrition, or gastro-enteric disturbance, in the old as well as in the young, that we are but in the beginning of our knowledge of a subject which, broad as it has appeared in the past, has tripled and quadrupled within a decade, and now opens up long vistas for future thought and research. We are not in a position to-day to say exactly what are the best modifications of milk to be used in all the manifold instances in which some modification is evidently indicated. We have learned that to modify milk is a wise and valuable adjunct to our treatment, and, in certain instances, what combinations of the constituents of the milk are best for the individual case.

From the milk laboratories of New York, Buffalo, Providence, St. Louis, Montreal, Chicago, Philadelphia, Baltimore, and Boston, we have already had thousands of people of all ages fed. From these laboratories have emanated thousands of prescriptions, written by over 2000 physicians. I have prescribed for a large number of individuals, but I do not feel, excepting in a limited class of cases, that I can tell you what should be prescribed for a special individual. When we consider that hundreds of physicians have been prescribing from these laboratories who have never spent a day, or even an hour, in really learning how or when the various combinations of the constituents of the milk should be given, is it any wonder that we should hear of failures in the individual treatment?

Looking at the subject as a whole, however, what stronger evidence can we have of the value of the principle that different individuals, both in health and disease, require different combinations of the constituents of the milk to suit their especial case than that, with all the ignorance of the prescriber working against the prescription, still, the result is that in a vast majority of instances the patients have done well? The position which it seems fair for us to take is that the principle of the modification of milk is scientific, is practical, is right, and that in the milk laboratory we have one more instrument of precision to aid us in our work, and that in all probability the failures are not to be attributed to the principle and the instrument, but to us, who, acknowledging the principle as a whole, and using the instrument, are as yet ignorant of the details which make up that principle and do not do the instrument justice.

What have we accomplished in our investigations of this subject? Where do we stand? In what direction should we work in the future? There is no doubt, in my mind, that the true and only way of approaching the problem of feeding is by turning the searchlight of scientific experimental investigation upon every one of the old ideas which time and tradition have imbued us with, and see whether these ideas and traditions will stand the test. A wise and complete iconoclasm is surely what we need to prepare a firm basis on which to build up a more rational system of feeding than has ever been dreamed of in the past. Dogmas, even though supported by the names of some of our most revered teachers, must be put aside if they do not stand before our modern methods of research. It will not satisfy us, because our predecessors said so, to claim that cereals in the milk lessen the size of the curd, if it has been proved in the chemical laboratory that they do not. It will not do, because supposed authorities have said that separating milk into its component parts destroys the emulsion, to accept this fanciful statement when, by means of photography, it has been proved that it does not. It will not satisfy us that because the expert chemist has told us that the proteids in human milk average 1 to 1.50 per cent. to therefore insist upon feeding infants on 1 per cent. of proteids when clinical evidence, combined with chemical analysis, teaches us undoubtedly that what is true and good for the average may be false and productive of harm to the individual, and that the secret to the correct management of the proteids is the new principle that variety, and not uniformity, produces the best results.

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[1] Read before the New York Academy of Medicine, February 18, 1897.

In contradistinction to those who claim that a given percentage should be given at a given age, we can show, by means of analyses made in the different months of lactation, and in different individuals, as seen in the accompanying table, representing a number of good human milks from mothers whose infants were thriving, that we must study the proteid digestion of the individual infant and discover the idiosyncrasy of the especial stomach.

Human Breast-Milk Analyses.

(Mothers healthy and infants all digesting well and gaining in weight.)
[Harrington.]

Constituents.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	XII.	XIII.	XIV.
Fat	5.16	4.88	4.84	4.37	4.11	3.82	3.80	3.76	3.30	3.16	2.96	2.36	2.09	2.02
Sugar	5.68	6.20	6.10	6.30	5.90	5.70	6.15	6.95	7.30	7.20	5.78	7.10	6.70	6.55
Proteids	4.14	3.71	4.17	3.27	3.71	1.08	3.53	2.04	3.07	1.65	1.91	2.20	1.38	2.12
Ash	0.17	0.19	0.19	0.16	0.21	0.20	0.20	0.14	0.12	0.21	0.12	0.16	0.15	0.15
Total solids	15.15	14.98	15.30	14.10	13.93	10.80	13.68	12.89	13.79	12.22	10.77	11.82	10.32	10.84
Water	84.85	85.02	84.70	85.90	86.07	89.20	86.32	87.11	86.21	87.78	89.23	88.18	89.68	89.16
	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

On examining these analyses you will observe that the percentage of the proteids varies greatly, and in only one case approaches one per cent. In a number of these cases where the infant which was thriving on one of these milks was changed to another, it ceased to do well, and suffered from acute indigestion. This at once opens up the question of the various artificial foods, and whether it is worth while to use them. There are only certain food elements which can be made use of, no matter what food as a whole is demanded. The artificial foods, if well made, should be unvarying. We all know that they must vary. If they vary, we must at once give up any idea of feeding with exact percentages of the different constituents of the food. Even if they do not vary, do we know enough about the exact percentages of these constituents to calculate how, in the completed whole, as mixed for the patient, we can give just such percentages as we deem best for the individual? That is, the *elements* of the food may be there, but the *combination* we do not get in any near approach to exactness.

Our investigations teach us that variety and comparatively exact combinations constitute the true principle of successful feeding and a resulting perfect nutrition. Is it not better to entirely put aside an uncertain conglomeration of the constituents of the food represented by these artificial foods and substitute in its place an exact method of combining these same constituents? Is not this the only intelligent and indeed practical method of dealing with such a difficult question as malnutrition?

There is very little question, but that by the careful mathematical calculations which are made by means of the Walker-Gordon laboratory tables, that at least more exact combinations of especial percentages of the constituents of food can be made than ever before. What is of equal importance also is that by these tables we enunciate the great principle in feeding, namely, that *variety* to suit the individual digestion is required and can be obtained by a simple prescription of a few figures; also, that an almost unlimited number of different combinations of the constituents of food can be made by the physician in as many minutes, and by the laboratory in as short a time, according to the number of clerks employed. I use the word "laboratory" simply to cover the idea of the principle involved. The changes in the percentages may be made by home modification; not so well as by the laboratory methods. Still, there are those who like to argue the question of their own peculiar way of arriving at correct results in home modification, disregarding the fact that to obtain an exact combination of the constituents of the food needs skilful mechanical training, as well as a correct calculation of figures, and that the personal equation of mother and nurse at home is often a serious drawback to the successful mixing of the food, for this mixing cannot be, in the vast majority of cases, so well done by mother and nurse as by the trained clerk in the laboratory. There are many other obstacles to the success of home modification which may arise. For instance, on four successive days here in New York, at the same reputable dairy, I had the request made to give me for purposes of home modification, for a sick infant, an unvarying cream. This cream, obtained from an honest, conservative dealer, I had tested each day, with the result of finding a variation in the percentage of fat from 10.13 to 28.34, which, of course, would at once preclude any chance of obtaining an unvarying percentage of fat in the mixture as given to the patient.

I have spoken of the uncertainty which arises when the physician endeavors to carry out an exact modification at home from the varying percentages of purchased dairy cream. But I have also found the "top milk process" (as it is called) also very uncertain. Milk set for the raising of cream by gravity, whether in an open pan, a jar, or a Cooley can, will vary with differences in the atmosphere or in the medium in which it is set. With great attention, though, the night or evening milk can be creamed in ten hours, with some degree of regularity in percentage. But it needs attention every fifteen minutes during this time. Open pan and jar setting is uncertain in its results, so that, unless debarred from access to a scientific laboratory, the physician cannot hope to obtain any great degree of exactness by home modification. The percentages of the sugar and the proteids will also vary from day to day in about the same way, though to a less degree than does the fat. A predetermination of the milk each day before modification by the usual dry process is indispensable to exactness in modification. This is expensive and tedious.

I wish also to speak briefly about the important question of employing for all infant feeding a safe milk. A safe milk is hard to obtain from the farm or dairy, and is especially hard to obtain in the private stable. A safe milk is a matter of the producers' conscientious work. The veterinarian must be constant in attendance to guard against such a common danger as tuberculosis. But perhaps the danger of infection in milk from this disease is very slight compared with danger of infection from other sources. Typhoid fever, diphtheria, and scarlet fever are easily transmitted by rinsing water, by the milker's hands and clothes, and by other common sources of dairy infection. These are common sources of danger, and yet perhaps not so dangerous as more subtle sources which lie outside of the observation of the physician who has charge of the modification. The rôle which the streptococcus pyogenes plays in infant pathology is very uncertain, and its virulence varies in any given instance. Yet it is beginning to be believed that this so-called non-pathogenic coccus becomes highly pathogenic in certain company, and that milk containing these cocci, which are quite commonly present in average dairy milk, becomes at times especially dangerous to the consumer. The experiments of Nivens in 160 cases, of Kruger (1890), of Guillebeau in seventy cases, of Karluiske, Escherich, Longard, Adamitz, Stokes, Bullock, Tonarelli, Ceveiuville, Taval, and especially Booker, all connect severe diarrheas in infancy and acute gastroenteritis with the presence of this organism.

Of especial interest in this connection are the observations of Stokes and Clement on a herd of seventy cows who were infected by the hands of a strange milker, who had had one of his fingers infected when working on a large dairy farm in York, Pa. A complete autopsy made on one of these cows showed that there was no general infection, but that the septic process was limited to a somewhat purulent inflammation of the milk ducts. Dr. Stokes also traced the source of an epidemic of diarrhea which broke out in a school of seventy girls, to milk from cows infected with this local sepsis. These opinions are to be taken for what they are worth in the individual mind of the physician, but the fact cannot be ignored that in nearly all farm, dairy, or private stables, the milk produced very commonly contains large numbers of these organisms. The fecal matter from the cow is a constant source of danger, and is present in nearly all the milk of commerce, while a direct pus contamination often occurs.

Of course, with great care and perfect supervision home modification may be done with more or less exactness and safety, but this entails a large amount of personal responsibility, which is guaranteed to the patient when the infant is fed from the laboratory by prescription, both as to the primal milk employed and as to the accuracy with which the prescription is filled.

In like manner there are physicians who, in their cry of *cheap* food for the people, do more toward injuring the cause of *proper* food for the people than any class that I know of. According to my own experience, it is the people of moderate means, and even the poor, who most appreciate the advantages of feeding by exact methods, and that it is the rich, aided and abetted by physicians ignorant of the rudimentary laws of physiology and development, who are continually preaching economy in regard to the most important factor in the problem of perfecting the human race through its nutrition; and it is this same class who uphold far greater expense in other branches of medicine. A good thing costs and should be paid for. Money is not ill-spent in developing in the best way those who must make and use that money in the future. The importance of this self-evident truth should be impressed on the people by physicians. Antitoxin is not withheld from the man of moderate means because it is expensive; its employment is the best for the patient, and he gets it, whatever his means may be. The infant, with its low vitality and its high mortality rate, should have the best means for reversing these rates, in the midst of its struggle for life. Let not the millions spent in charity be given entirely to the treatment of disease. Let some of it go to the cause of prophylaxis in the early periods of development, and to the proper management of the nutrition which, in the young, will do more to withstand disease, when it comes, than pounds and quarts of drugs.

Although I cannot as yet give you exact rules for the modification of milk in health and disease, I cannot help feeling that, from the large number of cases which I have treated in this way, certain impressions which I have derived from watching carefully the results of this treatment may be of some use to those of you who are working in this field of medicine. I shall not discuss such a side-issue as the use of cereals in a food for the early months of life, as it is the food which nature provides, containing certain elements, and no others—fat, sugar, proteids, salts, and water, which we are at present considering. In regard to the proteids, however, I would draw your attention to the fact that careful experiments have been carried out which show that, no matter what cereal or artificial food is added to milk, the size or density of the curd is not diminished. I would also state that in both health and disease, both in the infant, child, or adult, with the exception of a few especial cases, I have personally found that I am more successful in managing a difficult proteid digestion, not by predigesting the proteids, but by reducing them first to a minimum and then gradually, as the proteid digestion becomes stronger from not being overtaxed, increasing the proteid percentage until the amount necessary for nutrition is attained. Thus, beginning with the proteids 0.25 for all ages, whether infant, child, or adult, I increase up to 1 to 1.50 for infants, 2 to 3 for children, and 3 to 4 for adults.

It may, perhaps, be of some significance also to state that in making a careful analysis of 164 fully recorded cases treated at the Boston Walker-Gordon Laboratory, I have found a decided reduction in the percentages employed, amounting to at least fifteen per cent. during the last two years, in comparison with the high percentages used in the previous two years, and that during the same two years here in New York the same reduction has been found in the prescriptions sent to the laboratory by the New York physicians. That is, we are learning that low percentages, if carefully adjusted, produce better results than beginning with high ones. I have also found, somewhat to my surprise, that a critical review of my own prescriptions shows that my tendency has been to increase the proteid percentage much more slowly than in former years, and that I arrive at the percentage of 4, which is that of cow's milk, rather after the twelfth month than at or before that age of the infant. In private practice also the rule has been that in summer the most successful treatment of diarrheal cases has been with low percentages of all the elements of the milk, the average percentages being: Fat, 1.50 to 2.50; sugar, 4.50 to 5.50; proteids, 0.25 to 0.67.

I would also say that in modifying milk and carefully using the many different combinations at our command my experience does not accord (except in a very limited number of cases, and those arising probably from my own ignorance of the instrument I was using) with the experience of those who believe that certain individuals cannot take milk, or that milk is contraindicated in certain diseases. All foods contain practically the same constituents, and milk, or milk mixed with starch, comprises all these constituents. The individual does not reject milk, or suffer from malnutrition caused by the administration of milk. Milk is not contraindicated in an especial disease; on the contrary, it is some element, or constituent, or combination of the constituents making up the milk, wherein the fault lies. We might just as well at once, and better, too, because we can do it more exactly and more simply, find out by changing our modification whether it is the fat, or sugar, or proteids, or total solids, or starch digestion which is weak or diseased, or which, as a culture ground, will encourage bacterial growths in the individual. We can then remedy the trouble by not overtaxing the especial function until it has had time to recover its normal power. The great mistake which those make who experiment with foods is that they look upon the different foods and their action and effects in health and disease as a whole, and not at the details which make up this whole. Milk, as a whole, is a mild and simple dinner made up of the same food-constituents as are placed on our tables, excepting that in it we have the starch predigested into sugar. One individual can thrive best on an excess of vegetable food, another on fats, another on meat, and this idiosyncrasy of the individual in early life and in disease in later life can be met by simply modifying these food-constituents in the milk.

While studying the question of whether separating the fat from milk, and then recombining it in various percentages, might possibly produce any great change, such as a disturbed emulsion, and thus injure the food in some way, I had photographs taken of (1) cow's milk, (2) of cow's milk separated and recombined, (3) of human milk, and (4) of a modified milk of the same percentages as the human milk.

There does not seem to be such a perceptible difference between the resulting emulsions in these specimens as to make one believe that any difference exists between unseparated milk and the same milk separated and again combined.

In a fairly large experience derived from the care of infants who have been fed from the first days of life among people who have had sufficient means to give their children the best hygienic surroundings, I can state that I have never yet seen an infant who was carefully fed on milk during the first ten or twelve months of its life, by carefully changing the percentages of the milk constituents, and on nothing else, not enter upon its second year with firm flesh and an average development. I have found the teeth to be sound, and to come at the usual age. I have found the functions of sitting, walking, and standing, and the amylolytic function all appear and develop normally. I have followed these children into their third, fourth, and fifth years, and have found them strong, ruddy, with good bones and teeth, and with digestions which permit them to be fed on a general mixed diet of all the food elements.

Where I have been especially struck with the value of the idea that we should think, write, and speak in percentages representing the constituents of food, and not prescribe foods as a whole, is in the feeding of premature infants. Here we have a stage of development which peculiarly illustrates the principles of milk modification. In this early period of development, not only are the lungs and heart immature and in need of a carefully modified air, but the gastro-enteric tract is also undeveloped in its size and functions; it needs smaller quantities of food and shorter intervals of feeding than the stage of development met with at birth. Its functions are essentially weak, are not ready to be used, and if used, as they must be to support life, they are easily overtaxed, as I have proved over and over again. If we but recognize that while the fat digestion with its percentage of 3 to 4, the sugar digestion 6 to 7, the proteid digestion 1 to 1.50, are so well developed in the average infant at term, and so well provided for by human breast-milk with its percentages corresponding to what the digestive functions of this stage of development are ready to receive, we must realize, on the contrary, that the premature infant's digestive functions are in an earlier stage of development, and that at the seventh month of intra-uterine life the fat percentage, instead of being 3, as at the ninth month, may only be 1, the sugar digestion, instead of 7, may be only 3 or 4, and the proteid digestion, instead of 1 or 2, may be only 0.25 or 0.45,

These rules I have tested clinically, and they are significant as showing that nature, while providing the best food by means of the human breast for the stage of development met with at term, does not provide a suitable food for the stage of development met with in the seventh and eighth month of pregnancy. Also, that many a premature infant has died from being put to the breast of its own mother, for the human mamma has not been made to modify its milk constituents into low percentages, but from long ages of use and inheritance has been taught to modify in the higher percentages adapted to the tenth, eleventh, and twelfth, or rather first, second, and third months of life. In this class of cases, therefore, there seems to be no question that the careful modification of cow's milk by dealing with low percentages gives the premature infant a far better chance for life than does human breast-milk. Any one who has followed a premature infant from the day of birth, giving it up to the time of weaning nothing but carefully combined percentage feeding, seeing it digest and thrive first on 0.50 of fat, 4 of sugar, 0.25 of proteids; then on 1 of fat, 5 of sugar, 0.50 of proteids; then 1.50 of fat, 5.50 or 6 of sugar, and 0.75 of proteids; then on 3 of fat, 6.50 of sugar, 1 of proteids; then on 3.50 of fat, 6.50 of sugar, 1.50 of proteids; then on 4 of fat, 7 of sugar, and 2 of proteids in the sixth month, cannot help feeling that, at least, we are approaching the time when an exact system of dealing with nutrition is to be hoped for.

With equal satisfaction can we look upon the value of milk modification for purposes of weaning. Taking up the last percentages which I have just mentioned, fat 4, sugar 7, proteids 2, we now wish to replace at perhaps the tenth, eleventh, or twelfth month, in some cases later, this modified milk by unmodified cow's milk with its percentage of fat 4, sugar 4.50, and proteids 4. In no way can this be done so well and so satisfactorily as by slowly changing the percentages until they have approached each other so closely that the digestive functions of the infant cannot help being ready to receive unmodified cow's milk.

During the past three summers a large number of poor infants suffering from diarrheal diseases have been fed from the Boston Milk Laboratory on modified milk. Last summer having complete control of the fund which, chiefly through the generosity of Mr. N. S. Bartlett, has been donated for this purpose, I was enabled to have the administration of the milk kept under somewhat strict supervision. To accomplish this I only allowed it to be dispensed from three of the clinics where responsible physicians were in attendance. I also had a physician who thoroughly understood his work supervise all the cases which were treated. The results were most satisfactory, and in fact the universal opinion of all the many physicians in Boston who have watched and endorsed the principle of modification in the treatment of the summer diarrheas of infancy, is that it is unquestionably beneficial. Of the 115 gastro-enteric cases which were carefully analyzed while being treated with modified milk, 5 died, in 1 there was no improvement, and 109 recovered. Of those who recovered 23 did not have their modification changed but did well. Eighty-six had a number of changes made in their modifications and did well. The average age of the patients treated was 6.42 months. The milk in all cases was heated to 167° F. The average number of feedings was 7.5. The average amount at each feeding was 4.5 ounces. The average alkalinity was 6.3 per cent. The average percentages given were: fat, 2.6; sugar, 5.8, and proteids, 1.2.

What I hope in the future to accomplish is to have the diarrheal cases so differentiated that they will be fed and treated by a reduction of the especial constituent of the milk which appears to offer a culture ground for the development of especial flora in the intestines.

In conclusion I would impress upon you how important I have found it to be to always carry out strictly all the many details which are necessary if we wish to obtain satisfactory results in the feeding of cases of difficult digestion.

SERUM DIAGNOSIS OF TYPHOID FEVER, WITH REPORTS OF FIFTY-SEVEN CASES TESTED FOR THE REACTION BY EXAMINING SPECIMENS OF DRIED BLOOD.[1]

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ABOUT two months ago, very soon after the appearance of an article by Dr. Wyatt Johnston of Montreal on the application of the serum diagnosis of typhoid fever to the requirements of public health laboratories, I began a practical test of his method at the suggestion of Dr. E. H. Wilson, chief of the Bacteriological Bureau of our own Health Department. The purpose of this paper is to make known the results of these investigations and weigh their practical and clinical significance.

The phenomenon which is commonly spoken of as the "Widal reaction" may be briefly described at the outset as follows: Add a certain proportion of blood serum from a patient suffering from well developed typhoid fever to a bouillon culture or watery emulsion of the typhoid bacillus, and in from thirty minutes to several hours flocculi or clumps will have formed throughout the mixture and fallen to the bottom as a granular sediment, leaving the overlying fluid more or less clear. A control culture of the typhoid bacillus treated in the same way with the blood of a non-typhoid, sick or well, will remain uniformly cloudy, with no sediment. If a drop of the former mixture be transferred to a cover-glass and examined microscopically the bacilli will be seen to gather into masses and become motionless, while the few that remain free gradually lose their motility. A drop of the latter mixture will be seen to contain very actively motile bacilli evenly distributed throughout the fluid, and this condition will be found to persist for hours, and even days, if the specimen be properly sealed to prevent evaporation. To the agent which causes this agglutination, and which seems to be identical neither with the bactericidal or the immunizing substances of the immune sera, Pfeiffer has given the name "paralysin," and Gruber "agglutinin."

Knowledge of changes in the form of bacteria due to the action of sera of immunized animals rests on R. Pfeiffer's original experiments on specific cholera immunity. The so-called "Pfeiffer reaction" may be described as follows: Inject a mixture of an emulsion of the vibrios (cholera, etc.) which are to be tested, with a minute quantity of the serum of a very highly immunized animal into the peritoneal cavity of a normal guinea-pig. If the reaction is positive, all the vibrios are converted into spherules or coccus-like bodies in an hour or less. According to Pfeiffer, the vibrio is then to be regarded as belonging to the same species as that by means of which the immunization of the animal was carried on. If, on the contrary, the reaction is negative, the vibrios are unaffected after remaining an hour or more in the guinea-pig's peritoneal cavity, and are then considered to be of a different species from those used for immunization. In this same connection Pfeiffer demonstrated that the blood serum of animals immunized against cholera protects other animals against otherwise fatal doses of the cholera culture. He also noted the agglutination of the vibrios when combined with the serum, as described above, and he showed that the serum may cause this clumping outside of the animal's body if first injected for awhile into the peritoneal cavity of a sound animal. He demonstrated the same fact with typhoid serum and cultures.

Issaeff and Ivanoff, working with the *vibrio Ivanoff*, have the credit of having first demonstrated the reaction in gross and without the direct or indirect aid of the living body. This vibrio grew abundantly in the serum of a normal guinea-pig with clouding of the mixture. In the serum of an immunized guinea-pig flocculi formed, and in a few hours fell to the bottom of the glass as a sediment, leaving the supernatant fluid clear.

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[1] Read at the meeting of the King's County Medical Association, January 13, 1897.

Gruber and Durham[1] were the first to thoroughly describe the reaction and weigh its practical and theoretical value. They emphasized the reaction outside of the body of an animal (*in vitro*) and proposed its use instead of Pfeiffer's reaction to identify cholera and typhoid bacilli. Furthermore, Pfeiffer's reaction is regarded by them to be of a dual nature: (1) The weakening of the microbes before injection by direct action of the active serum. (2) The normal bactericidal influence of the guinea-pig's peritoneal fluid upon these weakened microbes. Very weak cultures treated with normal serum, and virulent cultures weakened by heat react in the same way on injection. They conclude, in this connection, that the reaction in vitro forms the essential part of Pfeiffer's reaction in so far as any specialized action is concerned, and that the use of the peritoneal fluid of a living animal obscures many of the points of difference which can be observed in the action of different sera. They demonstrated the phenomenon with cholera and many other vibrios, with several races of typhoid and colon bacilli, and also with the bacillus pyocyaneus, each being treated with its own or like serum—that is, a serum taken from an animal immunized with the same race that was being tested. They further prognosticated that the process occurs with all kinds of motile bacteria, and stated their belief in the probability that non-motile bacteria also will be found to react in a similar manner under the influence of their appropriate sera. In support of this, they mention typical reactions with colon bacilli, a majority of the individuals being devoid of the power of movement before the addition of the serum, and many of them unprovided with flagella; also, observations of "granular agglomerations" in hog-cholera bacilli (Metschnikoff), and in pneumococci (Washbourn), when grown in their own serum. They demonstrated that various chemical solutions, heat, foreign sera, tuberculin, etc., though they may influence the motility of the germs under observation, do not cause agglutination. In their experiments with typhoid serum, two kinds were used, with nineteen varieties of typhoid bacilli. All reacted strongly though with varying rapidity. When this serum was combined with emulsions of the colon bacillus, no reactions occurred, nor did any of the nineteen races of typhoid bacilli react to colon serum. In the colon experiments they employed one colon serum and ten cultures of colon bacilli from different sources, among them several from a case of fatal peritonitis. These different races of colon bacilli did not all react with colon serum, but it is noteworthy that not one of them exhibited the slightest reaction to typhoid serum.

Table No. 1.

Number.	Disease.	Reaction.	No Reaction.	Period of Fever.	Remarks.
1........	Typhoid.	..	1	9th day.	
2........	"	1	..	10th day.	Clinical diagnosis doubtful at time of test.
3........	"	1	..	21st day.	
4........	"	1	..	14th day.	Clinical diagnosis doubtful at time of test.
5........	"	1	..	10th day.	
6........	"	1	..	35th day.	
7........	"	1	..	21st day.	
8........	"	1	..	21st day.	
9........	"	1	..	Convalescent—14 days.	
10........	"	1	..	35 days.	
11........	"	1	..	8th day.	Clinical diagnosis doubtful at time of test.
12........	"	1	..	7th day.	Clinical diagnosis doubtful at time of test.
13........	"	1	..	35th day.	
14........	"	1	..	17th day.	
15........	"	1	..	9th day.	
16........	"	1	..	26th day.	Fever and headache the only symptoms of typhoid.
17........	"	1	..	7th day.	
18........	"	1	..	10th day.	Clinical diagnosis at first doubtful. Child of five years.
19........	"	1	..	14th day.	
20........	"	1	..	21st day.	
21........	"	1	..	18th day.	
22........	"	1	..	12th day.	
23........	"	1	..	14th day.	
24........	"	..	1	7th day.	Died of perforation eighth day. Sister of No. 23.
25........	"	1	..	10th day.	Marked typhoid symptoms, clearing suddenly about tenth day.
26........	"	..	1	6th day.	Test on third day also negative.
27........	"	..	1	7th day.	Developed undoubted typhoid.
28........	"	1	..	Several weeks.	

From the foregoing it appears that several investigators had observed and demonstrated the reaction of motile bacteria with their own sera, and in typhoid fever and cholera the serum of convalescents had been found to work equally well with that of artificially immunized animals. The value of the phenomenon as a method of identifying doubtful races of germs, and, *vice versa*, of diagnosing the disease, had been discussed; but it remained for Widal to make the phenomenon of practical diagnostic value by demonstrating that the serum of typhoid patients possesses this peculiar agglutinating quality as early as the fifth day of the disease, and very generally by the eighth or ninth day. He believes the clumping to be an infection, and not an immunity, reaction. Widal describes two methods of diagnosis which he recommends to be carried out concurrently. A brief description of the methods is in order, inasmuch as they are practically those adopted by all present investigators on the same line.

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[1] *Journal of Path. and Bact.*, vol. iv, No. 1.

First Method.—Draw a few drops of blood from the end of the finger. Mix the separated serum with ten parts of a one-to-two day typhoid bouillon culture. Observe with the microscope from one-half to several hours. If large clumps of motionless bacilli gather and the areas between are free or almost free from bacilli, the case is typhoid.

Second Method.—Draw about 5 c.cm. of blood from the median vein of the arm with a sterile syringe. Mix ½ c.cm. of serum with 4 c.cm. of typhoid bouillon culture. Incubate at 37° C. for twenty-four hours, when the reaction will be complete. (Breuer[1] notes that if the active serum is added to a twenty-four-hour typhoid bouillon culture the reaction will be plain in eight to twelve hours but less so at the end of twenty-four hours. If the bouillon is inoculated with typhoid bacilli at the same time the serum is added, it requires about twenty-four hours for the reaction to reach completion). To Widal must also be given the credit of having first stated that dried serum and, to a lesser extent, dried blood are capable of furnishing the reaction. His results and those of his followers in France have been so uniformly successful that they have inspired widespread confidence in the infallibility of the method. R. Stern,[2] in a review of Widal's report, says that the latter found the reaction present as early as the fourth or fifth day. He missed it once on the sixth but found it on the seventh day. All non-typhoids gave negative results. The reaction was most intense after the drop in the fever, but there was no proof of relation between the strength of the reaction and the severity of the disease.

Dr. Johnston,[3] independently of Widal, deduced from the fact that substances, such as the toxins and antitoxins (analogous to the agglutinins) preserve their charcteristics in a dry state, that the same might be true of the substances causing the serum reaction. He therefore examined specimens of dried blood from ten typical cases of typhoid and found the reaction to be complete in every instance. As control cases he examined the dried blood from a number of healthy persons, and from ten hospital patients suffering with other diseases than typhoid. In none of these did he get a reaction, except an "occasional pseudo-reaction" which he described as a partial agglutination and loss of mobility which was regained in an hour or two. Two doubtful cases failed to give the reaction, and subsequent developments proved that they were not typhoid. He concludes that this method is "just as efficacious as the pure serum method for the diagnostic purposes of the test," and recommends its use in public health bureaus to the end that typhoid cases may be earlier and more generally reported.

Such, then, is the history in brief of the development of the Widal method of serum diagnosis. I have yet to find a report of an experimenter who questions the specific nature of the reaction, provided the procedure recommended by Widal is carried out, and the reaction is tested both microscopically and in gross. Indeed, according to report it may be laid down almost as an axiom that if diluted sixteen times, the serum of typhoid is the only one giving a distinct agglutinative action with the typhoid bacillus. Unfortunately, the dried blood method brought forward by Johnston cannot claim the same degree of trustworthiness, nor can the microscopic examination of any emulsion in which the serum is used in low dilution. It is doubly unfortunate because the method is so simple that it could be rapidly introduced into general use. On the other hand, few physicians would care to subject their patients to a venesection, and even the simple capillary glass tube would be less used.

Before passing to the consideration of my own cases I wish to mention a few reported quite recently by other investigators. R. Stern mentions a case of otitis which, with the serum dilution of one-to-twenty, gave a typical reaction with typhoid bacilli in less than one hour. The patient had never had typhoid. R. Breuer, who is enthusiastic in his recommendations of the gross method, reports poor results with the microscopic method of procedure. He says his results with the latter were not clear or satisfactory—not to be compared with the former. "Reaction seldom occurred before 15 to 30 minutes and in that time, usually, the sera of other fever patients caused distinct agglomerations." He says, further: "In my hands this variety of the method (microscopic) impressed me as untrustworthy." He reserves his judgment, however, in view of the preference for and confidence in that method in France among the disciples of Widal, but calls attention to the fact that the latter recommends the use of the microscopic method together with the gross method as a control. He reports no individual cases tested microscopically, having confined experiments almost exclusively to the gross reaction.

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[1] *Berliner Klin. Woch.*, Nos. 47 and 48, 1896.
[2] *Centralblatt f. innere Med.*, No. 49, 1896.
[3] *N. Y. Med. Journal*, October 31, 1896.

TABLE NO. 2.

Number.	Cases.	Reaction.	No Reaction.	Remarks.
1	Phthisis	1	..	Cough, high fever, emaciation. No history of typhoid previously. Fresh specimen of blood one month later reacted at once.
2	Rheumatism	1	..	Reaction in five minutes. Repeated with fresh blood three weeks later.
3	Malaria	1	..	Fever the only symptom suggesting typhoid.
4	Tuberculosis	..	1	
5	Pneumonia	..	1	
6	Tuberculosis	..	1	
7	Syphilis	..	1	Secondary.
8	Tuberculosis	..	1	
9	Syphilis	..	1	Secondary.
10	Mumps	..	1	Convalescent.
11	Rheumatism	..	1	
12	Pneumonia	..	1	Third week.
13	Pleurisy	..	1	
14	Cerebral abscess	..	1	
15	Puerperal fever	..	1	
16	Doubtful	..	1	Temperature 99°–104° F. Two small hemorrhages from bowels. Temperature normal and rapid improvement after removal of ovarian cyst. No reaction one month later.
17	Malaria	..	1	Tertian form.
18	Scarlatina	..	1	
19	Pleurisy	..	1	Suspected typhoid at first.
20	Endocarditis	..	1	
21	Old typhoid	1	..	Had typhoid three years ago. Reaction in one hour.
22	" "	1	..	" " six " " " " "
23	Typhoid	..	1	" " ten " "
24	Old typhoid	..	1	" " six " "
25	" "	..	1	" " four " "
26	" "	..	1	" " sixteen " "
27	Normal serum	..	1	Guinea-pig's blood.
28	" "	..	1	Human blood.
29	Antitoxin	..	1	Serum of horse, 100 units.

Most unfavorable of all is the report of A. S. Gruenbaum[1] giving results of his tests conducted in Vienna. He used the microscopic method without regard to the ratio of dilution of the serum. As appears in the appended table, eight typhoid patients, and five who had had typhoid from five to thirty-seven years previously, gave the reaction, but so did also fifteen out of twenty-four patients suffering from miscellaneous diseases other than typhoid. It is a curious fact that all the jaundice cases tested gave a strong reaction with typhoid bacilli. Favorable to the dried blood method are the reports of Johnston—ten typhoids with uniform reaction, and ten non-typhoids with no reaction; and C. L. Greene,[2] twenty-seven typhoids with uniform reaction, and thirty-three non-typhoids with no reaction.

My own series of cases, collected from several hospitals and private practitioners of Brooklyn with the special end in view of testing the reliability of the dried-blood method, contains a few that also militate seriously against the usefulness of that procedure. The blood was in most cases dried on glass slides or pieces of paper before being sent to the laboratory. The usual precautions were observed, such as examining controls to see if the bacilli were not already clumped, preserving a nearly uniform temperature for the reaction, and examining the lower part of the drop under inspection, for clumps. A drop of distilled water was added to and mixed with a drop of dried blood. This was transferred to a cover-glass and a drop of an emulsion of typhoid bacilli in filtered water added to it. The glass was then sealed with vaseline over a hollowed glass slide and observed at intervals during one or two hours, and again at the end of twenty-four hours. In the great majority of instances the reaction occurred, if at all, in from one to thirty minutes. Two races of typhoid bacilli were used in the tests, one of the same race as those used by Professor Pfeiffer in his original experiments, and the other recovered by Dr. Wilson from the spleen of a fatal case of typhoid. The latter was subjected to all the important differential tests and its identity established beyond a doubt.

Case No. 3 of Table No. 2, a hospital patient, disease diagnosed as malaria and having no other symptoms of typhoid than remittent fever of two weeks duration, gave a clear reaction.

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[1] *Lancet*, September 30, 1896.
[2] *N. Y. Med. Record*, November 14 and December 5, 1896.

Case No. 2 of Table No. 2, of acute rheumatism, at St. John's hospital, gave the reaction in five minutes with both typhoid cultures. The test was repeated with a fresh specimen of blood three weeks later with the same result.

Case No. 1 of Table No. 2, of advanced tuberculosis, at the U. S. Naval Hospital, gave a doubtful reaction. One month later the reaction was marked and immediate. The patient could remember no sickness of recent years lasting longer than one week. Of the other twenty-six cases of non-typhoid contained in Table No. 2, all but two gave no reaction, and these had had typhoid three and six years before, respectively. Four other cases having had typhoid four, six, ten, and sixteen years previously, failed to give the reaction.

TABLE No. 3.

Disease.	Number Reported.	Reaction.	Day of Fever.	Dilution.	Method.	Reported by:
Typhoid..	10	10	....	Indefinite	Dried blood. Micro- and macroscopical	W. Johnston.
" ..	1	1	9th			
" ..	1	1	16th	....	"	R. Stern.
" ..	13	13	14th–21st	....	"	"
" ..	1	?	14th–21st	....	"	"
" ..	8	8	....	Indefinite	Microscopical	Gruenbaum.
" ..	1	1	6th	.5–4 c.cm	Macroscopical	R. Breuer.
" ..	3	3	8th	"	"	"
" ..	2	2	9th	"	"	"
" ..	4	4	10th	"	"	"
" ..	4	4	12th	"	"	"
" ..	6	6	14th	"	"	"
" ..	5	5	16th	"	"	"
" ..	6	6	21st	"	"	"
" ..	2	2	23d	"	"	"
" ..	3	3	28th	"	"	"
" ..	2	2	30th	"	"	"
" ..	1	1	40th	"	"	"
" ..	4	4	1–2 weeks, convalescent.	"	"	"
" ..	1	1	4th	Indefinite	Dried blood	C. L. Greene.
" ..	1	1	7th	"	"	"
" ..	1	1	10th	"	"	"
" ..	24	24	14th–65th	"	"	"

The cases diagnosed clinically as typhoid, or later developing typhoid symptoms, I have collected in Table No. 1. There are 28 of these, and 4 failed to give the reaction. One of the latter was examined on the sixth day of the fever, 2 on the seventh, and 1 on the ninth. The remaining 24 cases gave the typhoid reaction, and of these 2 were examined on the seventh day, 1 on the eighth, 1 on the ninth, 4 on the tenth, and the rest from the twelfth day to the second week of convalescence. In most of the cases typhoid had been already diagnosed at the time of the test, but in 5 the diagnosis was doubtful, and the test added a little weight to the proper arm of the balance.

The sera of 11 typhoids and 11 non-typhoids was tested with a culture of the colon bacillus, and the results were rather surprising in view of the results reported by Durham. A reaction took place in all of the 22 tests, more marked and rapidly developed in the typhoid sera, but distinct with the others. In all cases the reaction persisted during the time of observation, from one hour to twenty-four hours. The behavior of this race of the colon bacillus is most interesting and suggests a wide range of susceptibility in different races of the same species of bacteria. None of the 10 races of the colon bacillus used by Durham in his experiments reacted in the least to his typhoid serum. The same variation of susceptibility in typhoid cultures will be noted later.

Adding to my own the cases reported recently by Johnston, Stern, Gruenbaum, Breuer, and Greene, and collected by me in Tables Nos. 3 and 4, we have a number sufficiently large to make a fair basis for criticism and deduction. As is noted in the tables, the tests were made by some in gross and others microscopically; some with dried blood and others with serum. In all, 132 typhoids were tested, of which 1 gave a doubtful reaction, and 4, examined on the sixth, seventh, and ninth days, no reaction. One hundred and twenty-nine non-typhoids were tested, and of these 26 gave a reaction (7 having had typhoid from three to thirty-seven years previously), 5 a doubtful reaction, and 98 no reaction.

What conclusions are we justified in drawing from these figures? Considering my own results, and the more striking results of Breuer and Gruenbaum, I feel convinced that the method recommended by Johnston of testing dried blood in low and indefinite dilution contains too many sources of error to warrant its use as a method of diagnosis. Many varieties of serum in low dilution have been found to cause a reaction with typhoid, colon, and cholera germs. If in a given case the test be negative we can only report that it is either too early in the course of the disease to enable us to obtain a reaction, or that it is not typhoid; if the test be positive, that it is probably typhoid but may be something else. Fortunately, we have the promise of a more accurate and conclusive method, which I expect to use in a later series of experiments in this connection. Widal recommends a dilution of the serum 1–10 to 1–15, and Gruenbaum makes the statement that if diluted sixteen times the serum of typhoid is the only one giving a distinct agglutinative action with the typhoid bacillus. Widal states that at the height of typhoid the serum is active at a dilution of 1–60 to 1–80, and Stern states that in seven of his typhoid cases the serum was active at 1–100 to 1–2000. The serum of non-typhoids is said to lose the power of reaction very rapidly after three or four dilutions.

TABLE NO. 4.

Cases.	Number Reported.	Reaction.	No Reaction.	Dilution.	Method and Remarks.	Reported by:
Miscellaneous..	10	..	10	Indefinite......	Dried blood..................................	W. Johnston.
Otitis	1	1	..	1–20..........	Microscopical and Macroscopical. Patient never had had typhoid...........................	R. Stern.
Normal.......	5	5	..	Indefinite......	Had had typhoid 5–37 years before.............	Gruenbaum.
Miscellaneous..	24	15	9	"	Cholera vibrios reacted with 16 out of 29 cases, and colon bacilli with 3 out of 3. All jaundice cases gave strong reaction with typhoid bacilli.	"
Miscellaneous..	27	..	22	.5–4 c.cm	Macroscopical. Five gave a pseudo reaction.....	R. Breuer.
Miscellaneous..	33	..	33	Indefinite......	Dried blood..................................	C. L. Greene.

These matters of dilution and of culture susceptibility I believe to be of the utmost importance in testing for reactions, and unless the working errors dependent on them be reduced to a minimum we shall not be very sure of our results. If Widal's culture reacts to no higher dilution than 1–80, while Stern's culture reacts as high as 1–2000, it requires no effort of the imagination to believe that susceptibility may vary as much in the other direction, and that another person experimenting with an insusceptible race of germs might obtain negative results where they should obtain positive results. Pfeiffer and Kolle found cholera germs very variable in susceptibility to a given serum.

It is therefore of the greatest importance that the stock culture with which one is to work should, as a preliminary, be tested with a serum of known potency; and, furthermore, it is indispensable that the ratio of serum to typhoid culture should be fixed at a point where the serum of non-typhoids is surely incapable of reaction. With attention to these details, which is obviously impossible when one examines a specimen of dried blood, we may hope for less variable reports from those experimenting upon this line in the future.[1]

DISCUSSION.

Dr. W. H. Park of New York said: I have listened with great interest to the paper by Dr. Thomas. Like him, I have been making daily examinations of specimens of blood from suspected cases of typhoid fever. As to the method of examination, I agree with the opinions expressed except that I require the reaction to occur within even less time than he does. To be of value in establishing a diagnosis of typhoid fever, I believe that the bacilli should show upon the mixture with the serum an immediate inhibition of movement and a marked tendency to clumping. With dried blood solutions I believe that the reaction which occurs after fifteen minutes is often misleading. As Widal's serum test is quantitative rather than qualitative, we must use not more than one part of serum to nine of culture; otherwise, we will get reactions from non-typhoid cases. For practical purposes, examinations made from dried blood are nearly as reliable as from serum. For experimental purposes, the fluid serum is far better, as allowing more accurate dilutions. It can be obtained from blood or blisters.

The results obtained by me, and by the other workers in the laboratories of the New York Health Department, have agreed with those of Dr. Thomas. A definite reaction has been present in about seventy-five per cent. of the cases upon the first examination. It usually appeared by the sixth or seventh day. Regarding the duration of the reaction, I first feared that it would persist so long in the patient that it would interfere greatly with the value of the test in making a positive diagnosis. My experience has been, however, similar to that of Dr. Thomas. In very few does the reaction exist for over a year to such a degree as to interfere with the value of Widal's test for the present illness. As to whether the reaction occurs in other cases than typhoid, and if so, how often, we will have to wait for many more examinations. Dr. Thomas's case of phthisis, in which the reaction developed during the disease, would indicate that in exceptional instances the reaction may develop in non-typhoid cases.

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[1] Since writing the above I have read a circular issued by Dr. Johnston under date of January 7, 1897, in which he reports modifications of his method that render it less open to criticism. He states that he has recently met with a number of normal cases in which the serum causes a decided agglutination. By using attenuated cultures of the germs he finds that the reaction takes place with typhoid serum only. He also advises dilution of the mixture of dried blood and typhoid emulsion till it retains only a faint tint of the red. These modifications make the process more reliable, in my opinion, and the attenuation of the bacilli acts in a manner similar to the definite dilution of the serum which I have emphasized. I believe, however, that the latter procedure is the more accurate. By drawing a few drops of blood from the patient's finger in capillary glass tubes, separating the serum and mixing it with a definite amount of filtered water in a graduated capillary tube (Gruenbaum) a maximum degree of accuracy is attained and the procedure remains simple enough for general use as a diagnostic test.

I have myself met with three colored persons whose blood gave a decided reaction. These three all had continuous fever for from eight to ten days, but no other symptoms of typhoid fever. In none of them was the cause of the fever discovered, and they may have had irregular typhoid fever. It is possible that even in the case of phthisis reported by Dr. Thomas intestinal ulcerations may have been present, and possibly a slight typhoid infection have occurred. A definite typhoid reaction with blood or serum, one part to ten or more of culture, certainly rarely occurs, except with that from typhoid patients or convalescents. It seems to me that the results so far obtained warrant us in attributing great diagnostic value to a positive typhoid reaction. The absence of the reaction in a single test has little value. It does not exclude typhoid fever. Repeated negative results in a single case, or negative results in a number of similar cases, would have very great value, however, in excluding typhoid fever.

THE EXTRACTION OF TOO LONG RETAINED SILK AND SILKWORM GUT LIGATURES AND SUTURES.

By ROBERT F. WEIR, M.D.,
OF NEW YORK;
SURGEON TO THE NEW YORK HOSPITAL, ETC.

ALTHOUGH it is widely recognized at the present day that silk and silkworm gut may provoke or keep up suppuration and a sinus, yet the security attained from the use of these materials is so much beyond that afforded by catgut, however treated, or by kangaroo tendon, that many surgeons still employ them, particularly in regions where the breaking of a ligature or its too early relaxation might embarrass the operation, or, more rarely, endanger the patient. Many operators, for instance, prefer in ovariotomy, in vaginal hysterectomy, in castration, in nephrectomy, and similar operations, to rely upon a silk ligature rather than on catgut, particularly since the larger catgut required is so often difficult to render free from germs. It is only of recent years (and indeed, not always now) that the appendical stump is tied off by catgut, which is sufficient, rather than by silk, since this tube is easily compressed, and its temporary closure by the ligature is perfected in a few hours by rapidly forming peritoneal adhesions. When silk was used, not infrequently the sinus that persisted was found to be due to the retention of the ligature about the appendix, and I confess after I had abandoned silk for catgut in this operation, that some of Jack Horner's spirit often arose within me as I fished out, with the homely contrivance which is represented in Fig. 1, the offending loop left in by another operator.

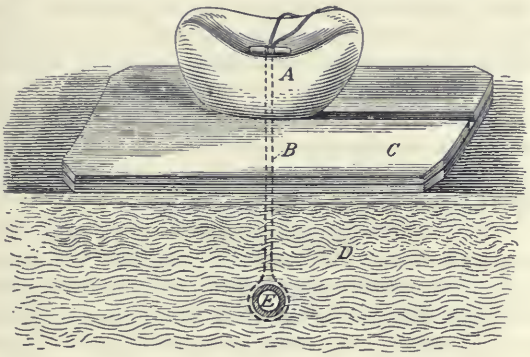
The vagaries of the ovarian silk ligatures are many, and so well known as to merit only an allusion to them. Silkworm gut is almost germ proof, and lasts indefinitely. I have extracted unchanged, a suture of this material seventeen months after its introduction into a wound. As a rule, it is well borne when used as a buried suture, but when its track is invaded by a germ infection, it acts as a foreign body. For special care in closing up the freshly cut deep abdominal fascia, in my judgment, the closely applied one-fourth-inch apart fine silkworm gut suture is not equalled by any other, not even by the kangaroo tendon suture. Though per contra, in the ordinary hernia operations where the tissues are loose and are often torn rather than cut, and where, hence, possibilities of a suitable germ soil exist, the kangaroo tendon works better. To this, however, I make the exception in the cases of recurrent hernias, or those with large openings, where I prefer yet to rely on the persistent silkworm gut suture, rather than the kangaroo tendon, which does not last as long as is generally supposed, a number of trials in my hands having shown that it rarely endures beyond fifteen or twenty days.

FIG. 1.

Crochet-needle of Bone or Steel.

Returning to the gist of these remarks, I ask attention, in the extraction of a sinus-producing buried suture, whether of silk, silkworm gut, or even of wire, to the use of the ordinary crochet-needle, made either of bone or steel, which can be bought almost everywhere, and at a cost of a few cents. The hook end, if too sharp, can be dulled with the edge of a file. For special cases I have had some steel ones made larger than could be bought, and also some that could be bent to accommodate the curves of a sinuous track. But with the use of this common implement a suture can often be caught, dragged to the surface, and seized by forceps, when it may be cut and extracted. Its need and its use is so self-evident that I fear that I am only telling a twice-told tale. In the cases where, in full cognizance of the evils of a silk ligature, I nevertheless have employed it, for instance, as the most important, in lumbar nephrectomy for pyonephrosis, I have usually left one or both ends of the ligature hanging out of the wound. The coming away of these ligatures may require from three weeks to three months, even though digital traction may be made from time to time. In one case just completed, the ligature still held at the end of the tenth week. In another operation two months since, the ligature remained *in situ* four weeks after the operation. I had in cases before these used the crochet-needle, but in the first of these last two nephrectomies I learned of a risk that does not usually exist in other localities. The needle in its introduction must have passed beyond the ligature, for in its withdrawal it caught in one of the renal veins and tore it, when a fierce hemorrhage occurred which momentarily alarmed me, though it was soon checked by firm pressure. I was therefore unwilling to try this plan again in that case, and began traction on the ligature by a rubber band to which was attached a two to four-ounce lead sinker. This, by gravity, the patient being up and about, cut the edges of the cicatrix, and its use was abandoned. Then the contrivance shown in Fig. 2 was employed, with excellent success. The ligature end was passed through a small rubber ball (costing 5 cents) and fastened, after squeezing the walls of the ball together, on its outer side. The thus flattened ball exerted pressure directly outward, and the only mishap that occurred was due to the counter pressure the ball exerted on the covered cicatrix. This was obviated by passing a piece of thin basswood splinting, duly padded, between the wound and the ball. After five-days' use of the traction, which was not particularly painful, the ligature came away. In the second nephrectomy, where the rubber-ball traction was similarly applied, the ligature came away in a week's time. In a third and fourth nephrectomy performed since then, I resorted, however, to a method which is even better than the foregoing one, but which requires more ample resources. The suggestion of it is due to Dr. Clement Cleveland, who showed at the meeting of the Practitioners' Society in May, 1896, some wire loop electrodes similar to those used for laryngeal cauterization. These he had used with success in freeing at will the silk ligatures employed in vaginal hysterectomy. At the operation the silk ligature is

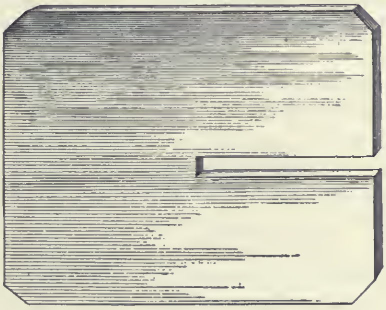
Fig. 2.



Rubber-ball Traction on Rebellious Ligature.

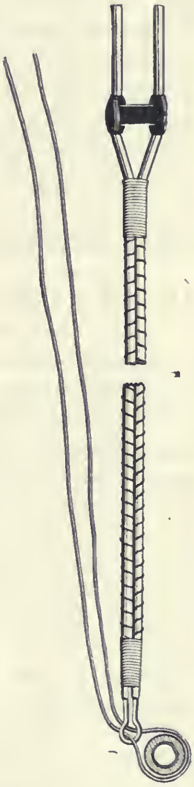
A, rubber ball indented by the traction of the ligature. *B*, ligature. *C*, slotted splint. *D*, skin and underlying tissue. *E*, blood-vessel.

Fig. 3.



Slotted Splint.

Fig. 4.



Cleveland's Cautery Wire Adjusted for Severing the Ligature.

passed through the base loop of the otherwise insulated electrode, and its ends pass out of the wound alongside the wires of the electrode. At the desired time, a galvanic cautery battery of weak power heats the little loop sufficiently to burn through and liberate the ligature. This plan was used by me in both of these nephrectomies with a most satisfactory issue, and left nothing to be desired. But in the absence of an electrode and a battery, I venture to commend the little expedient of the compressed rubber ball as simple, ready, efficient, and cheap. Mechanical hints of value often come from the patient himself or his friends. This was instanced in the second case of delayed ligature, as I was presented by the brother of the patient with the device of a spring tractor attached to a broad padded piece of wood with a spring of four-ounce traction power, and with a little ratchet capable of rendering taut the ligature emerging from the wound, but the rubber ball acted efficaciously and the contrivance was not tested.[1]

CLINICAL MEMORANDA.

EXCISION OF THE PRIMARY LESION OF SYPHILIS.

By WILLIAM P. MUNN, M.D.,
OF DENVER, COL.;
PROFESSOR OF GENITO-URINARY DISEASES IN THE UNIVERSITY OF DENVER.

THE effort to abort syphilitic infection by the excision of the initial lesion as soon as recognized has been frequently made, but, as a rule, without positive results. When the nature of the infection has been undoubted, secondary manifestations have occurred at the usual time. In cases where no secondary signs have made their appearance there has usually been some doubt cast upon the nature of the original infection.

The case here reported may be open to some doubt, although to me the preponderance of probability is in favor of the original infection being syphilitic.

A., about fifty years of age, married, is the father of perfectly healthy children, and has no history of previous syphilitic infection. About February 6, 1896, he had irregular sexual connection. The woman, he says, appeared to be healthy and presented (to him) no evidence of syphilis: she was not a prostitute. On February 21st, he presented himself for treatment of a sore which had appeared on his prepuce a few days before. The probable time from the date of connection to the time of the appearance of the sore was twelve days.

The sore was located on the prepuce at the junction of skin and mucous membrane; it was about one-fourth of an inch in diameter, was sharply outlined, and had exact edges which were completely indurated. The surface of the ulcer was bright red and was almost free from secretion. The patient had no fever, and there was no lymphatic involvement.

The physical appearances were absolutely characteristic of the initial lesion of syphilis although the time of appearance was a little shorter than we usually expect to elapse before the complete development of such a lesion. The patient was kept under observation for two days, and there was no increase in the amount of secretion, or change in the other physical characteristics of the sore. It was then decided to remove it freely by circumcision. This was done under chloroform anesthesia, and there was complete primary union of the circumcision-wound, although slight infection of one stitch hole occurred.

The man has been under careful observation ever since, being seen at intervals of about one month. At this date, one full year from the time of infection, there is no evidence of any of the secondaries of syphilis, nor has his general health at any time during the year been below par, except from a temporary manifestation of spinal symptoms at the location of an ankylosed lumbar trouble, dating from childhood. His skin is clear and clean; the mucous membrane of the mouth has at no time shown any evidence of patches; his weight has increased. The specimen removed was submitted to Dr. H. C. Crouch for microscopic examination, and he reported that it was in all probability an initial lesion of syphilis.

TRANSPERITONEAL LIGATION OF THE EXTERNAL ILIAC ARTERY FOR FEMORAL ANEURISM, WITH SUBSEQUENT DISSECTION OF THE SAC.[1]

By N. P. DANDRIDGE, M.D.,
OF CINCINNATI.

I WISH to report in the following paper a case of aneurism of the common femoral artery, which was treated by ligation of the external iliac artery, and the laying open of the sac and its partial removal by dissection after the ligation of the superficial and deep femorals. I should not consider the recital of a single case as of sufficient importance to engage the attention of the members of the Society did it not illustrate some of the questions now pressing for solution in connection with aneurism of the extremities. The facts of the case are as follows:

J. W. B., aged thirty-nine, colored, a laborer, entered the Cincinnati Hospital September 26, 1896. There was a history of rheumatism, and he admitted having had syphilis ten years ago. He has had gonorrhea twice, and is a moderate drinker. In May, 1896, he noticed a "lump" in the left groin, which throbbed and gradually attained the size of a hen's egg, and for three weeks he was obliged to abandon his work on account of the severe pain. His knee was drawn up and he could not walk. The tumor then became smaller, and he went back to work. Three weeks before entering the hospital, while carrying a hod up a ladder, he felt something give way in the left groin. He stopped work the same day and went to bed, there being severe pain in the leg. From the time of the "snap" the tumor constantly increased in size, the knee was drawn up and he was unable to straighten it. The pain became so severe that he decided to come to the hospital.

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[1] Since writing this paper I have seen described a method of using "traction" ligatures, which has been introduced by Dr. Grad of the Woman's Hospital, New York, which is superior to any device yet presented. He places under each tie of the knot a loop of silk, having thus for the ordinary knot two loops, and for a triple knot three loops, or tractors. One end of the ligature proper is cut short, and the other passes out of the wound. At the chosen time traction is made on the last applied tractor, and the last made turn of the knot unties. Tractor No. 2 is then pulled upon with a similar result, and finally tractor No. 3 disengages the first turn of the knot, when a light pull in turn on the ligature proper, disengages it, and its removal is allowed. A full account of this ingenious method is published, with explanatory figures, in the *American Gynecological and Obstetrical Journal* for February, 1897, with illustrative cases to which it had been applied.

[1] Read before the Southern Surgical and Gynecological Society, Nashville, November, 1896.

On admission, the knee was found drawn up at an angle of 45°, and the power of straightening it was lost. The severe pain was constant. In the left groin there was found a smooth, elastic, circumscribed pulsating tumor, 5 inches in the long diameter, and 3½ inches in the short diameter. The pulsation was expansile, and a well-marked thrill could be felt over the inner aspect. The tumor occupied Scarpa's triangle, reached fully up to Poupart's ligament, and outward as far as the spine of the ilium, and with the stethoscope a distinct bruit could be heard over its entire area. No pulsation could be found in the anterior or posterior tibial arteries at the ankle. It was evident from the condition present, and the history given, that we had to deal with an aneurism of the common iliac artery dating back probably to the accident in May, some six months, and which had become diffused at the time of the second attack, three weeks before the patient entered the hospital. The man was kept quiet in bed, on low diet, and iodid of potash was given. The swelling, with the transmitted pulsation, continued to increase steadily upon the outer and upper aspect, until it reached above and beyond the anterior superior spinous process of the ilium, and the pain continued to be severe. It was thus apparent that immediate operative interference was required. It was equally evident that ligation of the external iliac would be necessary to control the current of blood into the sac, as the aneurism involved the end of this artery as well as the common femoral. It was further apparent that the ordinary extraperitoneal operation, by an incision above and parallel to Poupart's ligament, was out of the question, as the pulsating swelling had already reached above and beyond the anterior spinous process and had invaded the iliac fossa. It was decided, therefore, to apply the ligature from within the abdominal cavity.

Seven days after admission, on October 5th, under ether anesthesia, a median incision about four inches in length was made, with the man in the Trendelenburg position. The external iliac artery was easily located by its pulsation, and an incision through the peritoneum, an inch or more in length, on its outer side readily exposed it. An aneurism needle armed with kangaroo tendon was passed from within outward and the vessel secured. Pulsation in the tumor at once stopped. The opening in the peritoneum over the iliac artery was closed by a fine silk suture, and the abdominal wound was then closed. An incision some six inches in length, reaching from above to a point below the swelling in the groin, was now made. When the sac was reached it was exposed by reflecting the overlying tissues with the handle of a scalpel. A free incision then laid open the aneurism, from top to bottom. A large amount of fluid blood gushed out at once, leaving some laminated clots, and exposing to view the fibers of the pectineus muscle, showing that the sac had given way. The cavity thus made by the escaping blood reached well into the iliac fossa. Free hemorrhage at once occurred from below, from the openings of the superficial and deep femorals, which were both within the area of aneurismal dilatation, and from a small vessel above. A probe passed from the opening in the sac-wall, located the superficial femoral in the matted tissues below and enabled us to pass a ligature around it, but in so doing the vein was wounded, and it became necessary to secure it by a ligature which included the artery as well as a considerable mass of tissue. The deep femoral artery was isolated and secured outside of the sac, and the bleeding points above were clamped by hemostatic forceps, which were left in place two days. As much as possible of the sac, about one-third, was then separated by blunt dissection and removed. The wound cavity was packed with iodoform gauze, which was brought out at the lower end of the incision, and the upper portion of the wound was then closed by suture. The entire limb was wrapped in cotton. There was a good deal of numbness complained of in the leg, and it became necessary to use the catheter for several days.

The abdominal wound healed by first intention. The wound over the tumor healed except at one point in the middle and at the lower level where the gauze-drain had been. On the fifth day a serous oozing occurred from the first of these openings. The discharge subsequently became purulent, and as the pus came from a pocket which could not be drained, the patient was again placed under ether and the cavity was laid open. The remnant of the sac was found to be in a sloughing condition, and there was a quantity of pus which had dissected out a cavity of large size. This was on November 5th, thirty-one days after the first operation. The cavity was drained by a counter opening upon the outer aspect of the thigh, a drainage tube being passed through to the front incision. The wound was left open and the whole cavity packed with strips of gauze. Four months after the operation the discharge had ceased. There remained, however, a complete paralysis of sensation over the anterior aspect of the thigh, and inability to extend the leg on the thigh. It is probable that some branches of the anterior spinal nerve were cut in laying open the sac.

In commenting on the course adopted in this case, the following facts should be made prominent. Ligation of the iliac artery was clearly necessary, as no form of pressure offered any chance of success. The invasion of the iliac fossa by the dissecting blood made it probable that the aneurism itself could not be opened by the usual extraperitoneal incision. It was therefore deemed necessary to secure the artery by opening the abdomen. The median incision was chosen, as it gave freer access to the artery, so that the ligature could be placed as high as was necessary, and because it would be further away from the opening in the aneurism which it was proposed to make than if we approached the artery by the lower part of the linea semilunaris, and which would therefore have been more liable to infection if suppuration should occur in the sac. The propriety of opening the sac was shown by the free hemorrhage which occurred from the openings of the superficial and deep femoral arteries, both of which were involved in the aneurismal expansion of the common femoral. This bleeding was only controlled by ligation of both vessels. If not thus secured, they would certainly have continued to discharge blood into the aneurism in sufficient quantities to cause its continued expansion. This part of the operation would have been much facilitated had we thought of throwing an elastic tourniquet around the thigh below. All bleeding could have been controlled, the arteries isolated, and the sac entirely dissected out. That complete, instead of partial, removal was desirable, is indicated by the suppuration and sloughing of the part left behind, which most certainly started from the remnant in place. The wound in the vein was not followed by any bad results.

I would formulate the following as the proper steps in an operation for aneurism of the groin situated so high that the common femoral cannot be secured: (1) Ligation of the external iliac by the transperitoneal route, through a median incision, with immediate closure of the wound in the abdominal wall. (2) The application of an elastic tourniquet about the middle of the thigh. (3) Free opening of the sac from top to bottom, and the removal of all clots, and the subsequent ligation of all the large arteries found opening from it, and then careful, complete extirpation by dissection and curettage. This will, I believe, be found much easier than the attempt to dissect out the mass entire before opening the sac. After opening, the different vessels can be located outside the sac by passing a probe along their course through the openings. Such vessels are often difficult to isolate. The vein should be spared if possible, but if this cannot be done it should be cut between two ligatures. Important nerves will be more easily avoided.

Bolton, in his article on "Special Aneurisms," in Dennis' "Surgery," vol. ii, page 414, says that "extirpation of the sac has twice been undertaken" in aneurisms of the groin, once by Rose in "an aneurism which had recurred two years after ligation of the external iliac," and once by Bazy, "who extirpated a large aneurism with success after tying numerous large afferent arteries." The same author, quoting from Delbet's statistics, gives 67 cases of ligation of the external iliac artery for aneurism of the groin, with 42 cures and 25 failures. There were 13 deaths (2 being due to accidental causes) in these 25 cases, and in the remaining 12 there was no change in 5, in 5 suppuration ensued and a cure resulted, in 1 gangrene required amputation, and in 1 secondary hemorrhage required a second ligation, and ended in cure. In estimating the advantage of extirpation of the sac, reference may be made to these figures. Thus, in these 67 cases, the aneurisms remained unchanged in 5, in 1 secondary hemorrhage occurred in the sac, and in 5 suppuration occurred. Suppuration in the sac is one of the recognized dangers if the sac is left. Such a complication, of course, would not take place after extirpation. In 5 cases no changes occurred in the aneurism after simple ligation. Extirpation of the sac may compromise the veins, though not necessarily so, and there is sufficient experience now to show that this is not of much importance. Furthermore, recurrence of the aneurism may take place even years after simple ligation. Extirpation of course provides for this.

Hubler (*Beitrage zur klin. Chirurgie*, Tübingen, May 28, 1892) has collected 40 cases of complete extirpation of aneurism from different sources. Twenty-eight of these were arterial, and 12 arterio-venous. Twenty-nine were traumatic, and 11 non-traumatic; in 18, the lower limb was affected, and in 16 one of the upper. These cases were all successful except one. In none of these cases was there any mention made of gangrene or secondary hemorrhage. If the common femoral artery can be reached in aneurism of the groin, a ligature should be placed upon it, and then the extirpation proceeded with as above. In cases of aneurism of the superficial femoral artery digital compression gives such favorable results and is attended by so little danger that it should first be tried, and if not successful ligation and extirpation should be proceeded with. The intimate relation of popliteal aneurisms to the overlying nerve and vein, and the proximity of the joint make extirpation extremely dangerous, so that ligation at a distance should probably be tried (in case compression of the femoral fails in place of extirpation) unless the aneurism is of very large size.

CLINICAL LECTURE.

THE NATURE AND OPERATIVE TREATMENT OF HYDROCEPHALUS; DRAINAGE FROM THE LOWER END OF THE SPINAL CANAL; REPORT OF A CASE.[1]

BY ROSWELL PARK, M.D.,
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PROFESSOR OF SURGERY IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF BUFFALO.

I SHOW you an infant, three months of age, suffering from a typical case of hydrocephalus of distinct type, which is not so far advanced as to make it necessarily or certainly hopeless. This is the first child of healthy parents, the mother being much younger than the father. The mother's pregnancy and delivery were normal, and the child was a month old before she suspected that anything serious was the matter, and took him to a physician. She consulted Dr. Woodbury, who kindly referred the case to me. Even at that time there was a disproportion between the upper and lower portions of the head, and the eyes were somewhat prominent. After the indications of hydrocephalus were complete, the child had a little accession of temperature, and remained listlessly in its mother's arms. I suggested the use of potassium iodid, with the hypophosphites, as a tentative measure, while the parents were considering the advisability of an operation. In view of the progress of the disease, they have made up their minds to submit the babe to anything that affords the slightest hope of relief of the condition; and it is here to-day for operation.

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[1] Clinical lecture delivered at the Buffalo General Hospital.

The therapeutic and medical aspects of the malady have been discussed elsewhere, and consequently I confine myself to considering its pathology and surgical treatment. First, we divide these cases into the *congenital* and *acquired* forms, with the statement, however, that as occurring in the very young a very large proportion of them belong to the congenital type, an explanation of the occurrence of the affection being afforded by some deviation from the normal arrangement of the brain and its cavities originating during the development of the fetus. We must distinguish also between the truly congenital and postpartum hydrocephalus. The acquired form may be observed alike in children and adults, and may be due to syphilis, tuberculosis, or rickets. Next we speak of hydrocephalus *internus* and *externus*, the former being much more common, and including those cases in which the ventricles are distended with fluid, for the most part the lateral ventricles, but occasionally the fourth and fifth. In the latter type the collection of fluid is mostly between the brain and the expanded skull. In a hundred cases of so-called hydrocephalus, about eighty per cent., if not more, will be of the congenital type and the internal variety. In many instances, when the development of the brain is notoriously defective, there will be corresponding defects in other parts of the body. The tendency of the disease is toward an early death, most of these children dying soon after delivery. None of the theories yet advanced, however, account for all the lesions noted in many cases, such as the widening of the occipital foramen and spinal canal, and certain defects in the central nervous system. In adult cases, separation of the cranial bones is not possible. This occurs for the most part in rachitic children in whom the skull expands by degrees until it is capable of holding a relatively enormous amount of fluid, even several hundred cubic centimeters.

Among the causes of hydrocephalus we will place, first, defects of development which permit distention to a degree varying with the nature of the defect. Next, we have to do with the accumulation of ventricular fluid as the result of meningitis, encephalitis, tuberculous disease, or atrophy of the brain. In the latter case it is essentially a *hydrops ex vacuo*. The extreme forms of hydrocephalus may be due to pachymeningitis internal, which may produce a subdural exudate, in which case the collection of fluid is diffuse; or to some local lesion by which we have an encapsulated collection of cerebrospinal fluid, which is afterward known as hygroma of the dura. Often in a case thus localized, when occurring in the young, we may have an expansion of the overlying portion of the skull.

In this particular instance we have undoubtedly to deal with a congenital or postpartum form of the condition which has assumed from the outset a chronic course, as it usually does, but which tends steadily to disaster, since the little patient is already showing the effects of brain pressure. Aside from the essential and objective features of this case, namely, the change in size and shape of the upper part of the head, there are other equally distinct features to which your attention must now be directed, and these are for the most part compression symptoms, the brain being actually compressed within the child's skull by the amount of fluid already present. You must not forget that the evidences of brain pressure are invariably the same, no matter what the compressing causes may be. These are unconsciousness, paralysis, loss of special senses, etc. In this instance the child remains for the most part apathetic, pays no attention to its surroundings, to flashes of light, nor to bright colors, is not attracted by moving objects, nor seriously moved by anything save that which gives acute pain. This night of the senses is characteristic of all these causes. The especial sense last to be affected is that of hearing, largely because of the great protection afforded to the organs of audition.

Regard now, for a moment, the hydrostatics of the craniospinal canal. You know that when fluid is confined under pressure, this pressure is equal at all points. Now the ventricles, the subdural space, the subarachnoid space, and the spinal canal all connect through well-known anatomical paths. The greater part of this fluid is normally contained within the subarachnoid space, which ordinarily is scarcely recognizable over the convexity of the brain, but easily so at the base, forming there the so-called "water-bed" upon which the brain is regarded as resting. This space connects with the ventricles by the foramen of Magendie, as well as with the sheaths of the nerves, from the orbit to the lower part of the spine. Pressure upon these nerves must interfere more or less with their function, evidences of such pressure being particularly distinct when made along the optic nerves. It is through the meshes of the arachnoid that the subdural and the subarachnoid spaces communicate. Thus, you will say that closure of Magendie's foramen may lead to the internal form of hydrocephalus. The subarachnoid space extends down the spinal canal; therefore, if it be tapped at any point the fluid will be removed from the cranial cavity.

Now the whole surgical treatment of hydrocephalus, consisting in removal of the excess of fluid, or at least of some part of it, is an affair mainly of deciding how this may best be effected, and whether it shall be a single or an occasional tapping, or a continuous drainage. The former is less serious and easier done, but correspondingly less efficient. Drainage when once established can be made efficient *if septic infection can be prevented;* this, however, is an almost impossible task, especially in little children or in babes like this one, and for reasons which are so self-evident that I need not discuss them here, this being equally true of drainage either about the head, neck, or lower spine. We have essentially the following methods, then, from which to select: (1) Tapping or drainage of the lateral ventricles. (2) Tapping or drainage at the base of the skull. (3) Tapping or drainage in the lumbar or lumbosacral region.

Some time ago I illustrated in this clinic the method of draining the lateral ventricle, in an infant some months older than this one, with a much expanded head. I made a small trephine opening at a point about an inch behind the external meatus and a little more than that above the base line of the skull; here I inserted a small trocar in a direction toward the opposite parietal eminence until it entered the lateral ventricle, which was drained by a very small rubber tube. In this instance I took strenuous pains toward asepsis and when the child died, as it did some two or three weeks later of marasmus, it was found both on ordinary examination and by culture experiment that there was an absolute freedom of the interior of the cranium from all septic infection. This method has been resorted to a number of times but has rarely if ever given anything like permanent satisfactory results. However, the ventricles when distended thus may be attacked either for effusion of blood, for acute distention by serum, for a collection of pus, for effusion due to pressure, for brain tumors, and for the diseased condition now under consideration. Not the least of the difficulties in the case is that met with in connection with the fluid which constantly escapes into dressings in which it may decompose and thus permit of infection. In time past a few surgeons have had the hardihood to inject a weak solution of iodin after withdrawal of some intracranial fluid, and though I have read of a few instances in which it was done with impunity there are no records to show just how often it has been fatal, though certainly this has been the case in a majority of instances.

Basal Drainage.—In 1893 Parkin suggested trephining of the occipital bone and puncturing of the subarachnoid space; and of five cases treated in this fashion, one of them being a case of tuberculous meningitis, three recovered. In the same year Stephen Paget thought to drain a case of acute meningitis by cutting away the posterior arches of two cervical vertebræ, the fourth and fifth, and although he opened the membranes, the autopsy showed that the drainage was insufficient, and that occipital attack would have been more successful. Drainage at the base of the skull, combined with pressure, has been even more successful. One foreign surgeon made three punctures in a four-months' old baby, and removed altogether 1135 cubic centimeters (more than two pints) of fluid, but improvement was only temporary. Baskett, a British surgeon, operated on a child nine weeks old, tapping the head and removing a half pint of fluid, and a few days later he incised the anterior fontanel, with temporary improvement. The opening between the ventricles closed, after an attempt was made to relieve pressure by an opening on the other side, and the autopsy revealed a plug of pus in the dilated foramen of Monro. And so the matter stands with regard to surgical operations upon the head for hydrocephalus. If this route be adopted, I should advise the insertion of some aid to continuous drainage, as, for instance, a bundle of prepared horsehair introduced through Horsley's dilating director. Not infrequently we have, as a result of tapping, signs of cerebral irritation; *e.g.*, vomiting, cramps, crying, pyrexia, etc. Since puncture, frequently repeated, is hazardous, I hold it good practice to make two or three punctures at most, after which, if marked improvement does not occur, it is best either to discontinue them or to establish permanent drainage.

Spinal Drainage.—Thirdly, we have to discuss the question of attack through the lumbar or lumbosacral region. In 1891 Wynter suggested drainage through the lumbar region by puncture of the membranes. After tapping a three-year-old patient, he maintained permanent drainage by a rubber tube. Much improvement followed for a time, but when the fluid ceased to escape the child died. About the same time Quincke reported ten operations, pressure upon the skull being combined with puncture in the lower spinal region. One of his patients was cured, in three there was considerable improvement, and none of them died. The suggestion to merely puncture has been modified by some who have cut down upon the lumbar vertebræ and either punctured the dural membrane, or, in at least one instance, opened the spinal theca and stitched its edges to those of the skin wound. These more radical measures have never succeeded in giving permanent relief; on the other hand, the method of simple puncture, which I shall illustrate in this case, has been followed in some cases by the best results. According to the last statistics, Quincke has done the operation forty-one times, and values it, not alone for its therapeutic affect, but because of its diagnostic possibilities, since the fluid thus obtained may be submitted to both chemical and microscopic analysis. When the albumen increases beyond the proportion of one part to 1000 there is an acute increase in the degree of inflammation and exudation present; should the fluid be bloody this is still more true.

Next let me call your attention to the anatomical fact that the spinal cord, as such, terminates opposite the second lumbar vertebra, and that a needle point introduced at the lumbosacral junction cannot, at most, do more than injure some particular nerve trunk. There are two or three methods by which this little operation may be performed. In infants the cauda equina is divided into two lateral bundles, separated by a space of half a centimeter, and the distance from the exterior to the cavity of the spinal canal, in infants, is two centimeters, or a trifle more, while in adults it is two or three times that distance. As you see, I make use of an ordinary aspirating needle, which may be passed in quite obliquely toward the interior, between the third and fourth lumbar vertebræ, or at the same level by piercing the skin perpendicularly a little to one side of the middle line; or, the lumbosacro interval may be perforated, after the latter fashion, the needle being directed a little more obliquely, which plan I shall follow in this case. I expect to direct the point of the needle upward and forward through the latter space, because it is larger, and the danger of injury to the nerves is decreased.

I have had a little ether administered so that the baby may not suffer, though it is likely that I could perform the operation in its present mental condition without provoking much evidence of pain. I place the child over the end of the table, with its buttocks projecting, and its legs hanging down, in order to curve the spine and open the lumbosacral space as widely as possible. The skin has been carefully prepared, as has this needle, which has just been taken from boiling water. Entering the needle a little to one side of the middle line I pass it forward in a direction slightly upward, which I know must take it into the spinal canal at a depth of about

2 centimeters. You see that the fluid begins to flow out and so easily that I disconnect the suction apparatus and simply let it escape as it will. Observe now a very interesting phenomenon. The child having partially recovered from the effect of the anesthetic, every time it gasps, or cries, or coughs, we see that the stream of fluid becomes a jet which is spurted out to a little distance. This should remind you that with every expiratory effort blood is forced into the cavity of the cranium and tends to expel the cerebrospinal fluid contained therein. I could give you no better demonstration of what I before alluded to as the law of hydrostatics within the cerebrospinal canal. This is the legitimate but secondary outcome of a scientific surgical operation for the relief of this condition. In this way I permit as much fluid to escape as runs easily, and now that it comes drop by drop I withdraw the needle, make pressure over the opening, seal it with collodion, and over this apply an aseptic dressing.

NOTE.—The child was shown to the class on the fourth day with the mother's statement to the effect that it had seemed less listless and more active than before the operation, while at the same time it had been more irritable and called for more attention on her part. The patient was dismissed with directions to the parent to report for a second puncture at the end of one month. At the expiration of the month the child was again shown to the class. Its condition was certainly improved; it was brighter, noticed things about it, and made ordinary motions with its limbs. The anterior fontanel did not bulge, and there were no signs of increased pressure within.

MEDICAL PROGRESS.

The Probable Cause of a Typhoid Epidemic.—BERRY (*Lancet*, December, 1896) reports the details of an epidemic of typhoid fever which occurred in Grantham during the summer of 1896. No explanation of its origin was obtained by an examination of the water supply, of the milk and food supply, of the sewers of the district, or in the disposal of excrement. A careful study of the history of the epidemic led the writer to believe that the poison was introduced into the subsoil from a block closet in an early case, and that it was disseminated either by ground air or by ground water. This view is supported by the fact that the point where the epidemic commenced is higher than the districts subsequently affected. Further, the sudden cessation of the epidemic (allowing for the incubation period of the disease) coincided exactly with the falling of cold rains, which would check germ growth in the affected subsoil.

Consideration of the Modern Treatment of Hypertrophy of of the Prostate from an Experimental Point of View.—In view of the widespread popularity of double castration for hypertrophy of the prostate, the results of Sackur's experiments on dogs and rabbits are of interest. In examining the preparations of contracted prostates, Sackur came to the conclusion that the process is not one of proliferation of the gland cells, then fatty degeneration, and finally disappearance of these cells, nor is the process one of hyperplasia, but is rather an embryonic connective-tissue production rich in the proliferation of cells encompassing the individual acini, which compress the lumen of the glands till these finally atrophy and disappear altogether. The increase in the interacinous tissue is only a relative one, brought about by the disappearance of the glandular tissue. Hence the truth of the assertions of those authors who ascribe better results in those cases where castration was performed for soft hypertrophy of the prostate than in the cases of hard hypertrophy. In the former, there was a great deal of glandular tissue that could undergo atrophy, which could not take place where the hypertrophy was of a fibrous nature.

Sackur further demonstrated experimentally that the removal of but one testicle has but little effect on the reduction of the hypertrophy. In such instances hypertrophy of the remaining testicle takes place. He was able, by section of both vasa deferentia or resection of the same, to obtain complete results. In one case, however, in which no result was obtained, the author could detect a delicate canal which served to connect the severed ends. Section of the nerves of the testicle was followed by the same results as castration. This latter method is precluded in human subjects by the difficulty of the technic. Gangrene of the testicles did not follow either complete section of the vasa deferentia or section of the nerves. Collating the experimental and clinical results, Sackur arrives at the following conclusions: (1) Instead of castration, ligation and section of the vasa deferentia in toto and resection of the isolated vas give equally good results in cases of hypertrophied prostate. (2) Cessation of the testicular function is indispensable to a cure. Single castration is of no avail.

The Ability of Bacteria to Pass Through Intestinal Mucous Membrane.—The question of the permeability of the intestinal canal for different kinds of microorganisms has been revived by the investigations of French authors, who claim to have found bacteria in great quantities in the chyle. NEISSER, however (*Centralbl. f. innere Med.*, No. 50, 1896), claims that the chyle, under ordinary circumstances, is entirely free from bacteria, and, although it does not possess any germicidal properties, he did not find any bacteria either in the lymph glands or in the blood vessels associated with the intestines; so he concluded that the intestinal wall was not pervious to them. Nevertheless, the question is not entirely settled, for there seem to be circumstances under which bacteria in the intestines are capable of setting up a general infection, while under other circumstances, countless germs of a highly pathogenic character may remain for days in the intestines without doing any injury.

The Diagnostic Value of Dental Malformations in Hereditary Syphilis.—FORTIN (*Gazette Hebdom. de Med. et de Chir.*, No. 96, p. 1149) considers these dental dystrophies more important in the second than the first dentition, though observed in both, and enumerates:

1. Early alterations: Slow eruption, erosions, micro-

dentism, amorphism, softness of the dental system, white ridges, and irregularities of implantation.

2. Secondary alterations: Changes of color, accumulation of tartar, traumatic lesions, caries, stomatitis, and early loss of teeth.

Collectively, these malformations indicate only a nutritive disorder, or an arrested development, and, considered individually, no single one is pathognomonic of hereditary syphilis. Erosions are seen in children who have had convulsions, in the scrofulous, in chronic enteritis, and in idiots. The notching of the superior lateral incisiors (Hutchinson), very rare without syphilitic history, is nevertheless seen in the scrofulous.

Tentative treatment is advised in every case of hypodermic injections of mercury and iodid of potassium, care being taken to avoid mercurial stomatitis.

Dental malformation may be hereditary.

THERAPEUTIC NOTES.

Influence of Vapor Baths Upon the Blood Pressure.—CERRINA (*Bull. Gen. de Therp.*, January 15, 1897) has conducted a series of experiments in order to determine whether vapor baths can be prescribed without danger in the diseases which affect the circulatory system. He finds that without exception vapor baths reduce the blood pressure. The indications for their use are given by him as follows:

1. In those affections accompanied by increased blood pressure (aortic insufficiency) vapor baths are of service in reducing this pressure.

2. In those conditions which predispose to apoplexy vapor baths are not contraindicated. Indeed, owing to the cerebral anemia which they produce, such baths may act to prevent an apoplectic stroke.

3. In cardiac affections with diminished blood pressure (mitral lesions) a distinction must be made between cases with complete compensation, and those in which compensation is incomplete. In the former cases vapor baths may be used as the diminution of pressure thereby produced is not greater than the diminution which occurs after such baths in health. In uncompensated cases vapor baths are absolutely contraindicated.

Comparative Therapeutic Value of Active and Passive Exercise.—SEAVER (*Yale Medical Journal*, March, 1897) concludes an interesting study of the effects of active and passive exercise upon the different systems of the body with the statement that passive movements produce less active, but more complete combustion, and the waste products are in better form for elimination than under more rapid waste production of active exercise. Moreover, there is undoubtedly a possibility of securing a healthful exercise of central nerve-cells by peripheral manipulation.

However, it appears that passive exercise cannot take the place of active exercise in the relief of what may be considered over-charged motor areas in the brain, and that its highest use will be found in such cases of malnutrition and cell exhaustion as occur when debility is the result of overwork and prolonged wear and tear. It would, therefore, be preposterous to prescribe passive exercise for a person whose central nervous system was irritable from lack of normal discharge of nerve force, and active exercise would be strongly indicated. A converse of this statement is also true, that to prescribe active exercise for a person whose motor areas are all overworked, or whose nutrient processes are poor, would be prejudicial to the future health of the patient. It should then be borne in mind when considering the practicability of prescribing exercise that an intelligent choice should be made, as in the use of ordinary drugs; for in no other way can we expect to obtain uniform and satisfactory results.

Treatment of Tuberculosis of the Larynx.—Since lactic acid was first recommended for the treatment of tuberculosis of the larynx it has been widely employed on account of its property of attacking only the diseased tissue. BOTEY in order to avoid the severe irritation, with laryngeal spasms which sometimes follows its use, recommends (*Centralbl. für die Gesam. Ther.*, January, 1897) a combination of lactic acid with carbolic acid and glycerin, which possesses, according to his experience, the quieting action of the latter substances with the specific action of the former. He begins with a solution in glycerin of carbolic acid five per cent., and of lactic acid ten per cent. In sensitive patients the use of cocain is advisable. The brush should be introduced three or four times and an energetic application made. The strength of the solution may be rapidly increased until the following is used: Carbolic acid one part, lactic acid three parts, glycerin four parts.

Radical Cure of Hernia by Implanting a Section of a Sterilized Sponge.—In the *Bulletin* of the Johns Hopkins Hospital, March, 1897, PLATT describes an operation which he has four times performed for the radical cure of inguinal hernia. The canal is laid freely open. The sac is opened, emptied of its contents, ligated as high up as possible, and removed. A piece of fine, firm sponge the size, shape, and thickness of a silver dollar is sterilized without boiling by immersion in soda solution, sterilized water, permanganate of potash, oxalic acid, and normal salt solution. A radial incision is made in the sponge and it is slipped over the cord. The edges of the cut in the sponge are slightly overlapped and held together by two sutures. The disk of sponge is then spread beneath the abdominal ring at right angles to the cord which pierces its center. The conjoined tendon is then sutured to Poupart's ligament by two or more quilted sutures. The inguinal canal is closed with silk, and the skin with silkworm gut. "It is absolutely necessary to use some kind of drainage in the upper part of the wound, as there is invariably some serous oozing and swelling. This may be removed after twenty-four hours." Platt has performed this operation upon four children, aged four, five, eight, and twelve years. In two of the cases it was necessary to remove the deep sutures on account of a persistent sinus which healed without the removal of the sponge. One of these cases recurred in five months. The other cases were well seven months after operation.

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EXACTNESS IN INFANT FEEDING.

IN this issue will be found a mature article on the subject of modified milk, by the originator of this plan of substitute feeding. Prof. Rotch has taught the profession to think in percentages, to feed by figures. Many excellent preparers of adult foods, with a little of this and a pinch of that, set upon the table triumphs of individual skill. It is a notable fact that such masters of the art cannot, as a rule, impart to others their recipe and secure to them like results. Feeding by prescription, estimating by percentages, thinking in figures, an intelligent mutual understanding among physicians—these are some of the features of this exact method.

There have been three important steps in exact infant feeding. The first came from studying the composition of the breast-milk of women nursing infants of equal age, all thriving. It was found that the component parts of such feedings vary greatly (Rotch, Adriance). Disturbances of mind and metabolism, worry and fatigue, influence the milk composition. If a mother worries, the baby has colic; if she gets overtired shopping, a like result. If a stolid wet-nurse sits indoors and gets constipated, the baby is affected. It is now known that this disturbance is due to a derangement of the proper proportions of the constituents of the milk.

The first step consisted in ascertaining the low and high average percentages of fat, sugar, and proteids in the breast-milk of women nursing thriving infants, when once rapid growth had been established. Such percentages have been found to be, approximately, low average: fat, three per cent.; sugar, six per cent.; proteids, one per cent.; high average: fat, four per cent.; sugar, seven per cent.; proteids, two per cent. In earliest infant life, when there is no breast-feeding, there is a departure from these standards, likewise in normal conditions of the infant's digestive capabilities.

The second step consisted, after having learned the variations of breast-milk, in procuring a substitute feeding capable of equal variation. Practically, cow's milk is the only substitute for mother's milk. At the outset, the problem has been to convert the percentages—fat, 4 per cent.; sugar, 4.5 per cent.; proteids, 4 per cent.—to the above-mentioned high and low average percentages of breast-milk. Dr. Rotch has studied the first and second steps in a masterful manner. He has studied Nature's variations, and has thereto adapted substitute variations:

Low average—Fat, 3 per cent.; sugar, 6 per cent.; proteids, 1 per cent.
High average—Fat, 4 per cent.; sugar, 7 per cent.; proteids, 2 per cent.
Cow's milk—Fat, 4 per cent.; sugar, 4.5 per cent.; proteids, 4 per cent.

His aim has been to take cow's milk apart and put it together in the proportions of breast-milk, to add lime water to tip the balance from acid to alkaline, heating it enough to insure its freedom from pathogenic germs. He does not put into the milk cane-sugar; he does not put into it cereals; he does not put into it patent prepared commercial foods. With his eyes upon Nature's lines of variation, he prescribes a varied substitute.

The third step consisted in making it possible to adapt this study to practical purposes. Prescription writing, laboratory compounding, exact dosing, is as fruitful of good results in feeding as in pharmacy. It is everywhere evident in the writing of Dr. Rotch that the study of infant feeding, for which he will always be known, has begun with the dairy and continued to the nursery. Clean cows and clean stables, clean milkers and clean pails, rapid cooling and quick transportation have been emphasized. Good milk, carefully handled, exactly modified, and intelligently prescribed—this is the accomplished work, which future writers will dwell upon with unstinted praise.

In pediatrics there is nothing more important than feeding. In feeding there is no method comparable with that of modified milk. The graduate of fifteen-years' standing has seen added to pediatric practice three great aids: intubation, antitoxin, and exactness in infant feeding.

THE MODERN TRAINED NURSE.

Both lay and medical British journals have, of late, discussed the modern trained nurse from a sociological and professional standpoint. The chief lay critic, Lady Priestley, denounces the private nurse as "arrogant, dictatorial, flighty, frivolous, overtrained, underbred, an *intrigante* of the first water, a matrimonial adventuress, and an expensive luxury of doubtful utility." An English opinion on this subject demands some respect, as it was in Great Britain that the trained nurse was first evolved. It cannot be denied moreover that some of the painful experiences of Lady Priestley have been ours, and a short discussion of the subject is therefore not out of place.

Whatever faults or shortcomings a trained nurse may have, we may rest assured that the factors governing her selection, training, and after-management are largely responsible. The semiprofessional nature of the occupation imparts a sort of glamor which attracts more than the compensation and, it must be confessed, the class thus attracted seldom make the most desirable nurses. Feeling themselves too good for domestic service or employment in factory or shop, they see in nursing a sphere of intimate usefulness where indulgence, more than desert, has accorded them a social status to which some condescend to let themselves down, and to which others rise with undisguised satisfaction. That this anomalous, and often undeserved social standing, is sometimes taken advantage of is true. Too many immature women are admitted to training schools, and too many with unchangeable and improper ideas of the position and functions of a nurse. Once admitted, the period of probation is too short and the weeding-out process during, and at the close of this period, is too restricted. The curricula of most schools are too theoretical. Courses of study and lectures, on subjects better left alone, consume time and strength which should be devoted to practical work. This is partly the physician's fault, as he it is who lectures too frequently "over the nurses' heads." Often, however, the managers, or the principal, map out the lectures, which frequently are as inappropriate in training schools for nurses as conic sections in a kindergarten.

Again, in undergraduate life too much is made of the supposed hardships of nurses, and they are entertained, coddled, and housed in palatial quarters until thoroughly spoiled for their real life-work. Treated often with more consideration and quartered more sumptuously than the house staff, whose servants they are, what wonder that they sometimes become "arrogant" and "dictatorial," as Lady Priestley says, when graduated and free lances in the community.

If judiciously selected and properly trained, the modern nurse is an unmixed blessing. Faithful to patient and loyal to physician, how much suffering she saves one, and how much anxiety the other! "Flighty," "frivolous," or "underbred" they never could be if properly selected; "arrogant," "dictatorial," or "overtrained" they never would be if properly taught; and, if they sometimes stoop to "intrigue" or "matrimonial adventure," who dare deny that the physician sometimes sets them the example.

Having nothing to do with the admission of nurses to training schools and little to do with their instruction, the profession has to take them as they are; but it lies in the power of physicians by firm and concerted action to keep an undesirable nurse out of employment, and in that way save the public or profession from her blighting presence. The selection or retention of a nurse generally devolves upon the physician, and he has himself to blame if a nurse, found to be disloyal to him or unfaithful to his patient, continues to prosper.

What is really a fact to be deprecated is that overproduction and a predilection on the part of some employers and physicians for the young, fresh, and pretty, have crowded the older, more experienced, and hence, really more desirable nurses out of private employment. This deplorable condition has not proved an unmixed evil, however, for, while those of the profession who appreciate faithfulness and experience in a nurse rather than youth and comeliness, have lost trusty helpers, the poor have been gainers, as many of these veterans have taken up district nursing, in which occupation they get a small regular salary and do an immense amount of good among the poor, not only ministering to their physical ills, but also doing invaluable missionary work in matters of cleanliness and hygiene.

With all her virtues and all her faults, we must remember that the trained nurse is a woman, and that the lines of Scott apply to her as well as to the rest ot her sex:

> “When pain and anguish wring the brow,
> A ministering angel thou!”

THE CANADIAN MEETING OF THE BRITISH MEDICAL ASSOCIATION.

“POLITELY but firmly,” says the *Medical Press*, “measures are being taken to point out that the meeting of the British Medical Association at Montreal, in August next, is not intended for the *‘οι πολλοι* of the American profession of the United States, but that it is distinctly a gathering of the members of the Association, together with certain specially invited guests.”

There can be no reasonable objection to the Association making such arrangements as will best conduce to the success of the meeting in accordance with its highest objects and aims, but it is just possible that this can be more “politely” done than has been attempted in this brusk venture of our excellent contemporary. However, it is important that the members of the profession should comprehend the circumstances under which the Association meets this year in Montreal, and so avoid any embarrassment or irritation that might arise from misunderstanding.

> “We're a great people, that's beyond a doubt,
> And nothing loth to let the secret out.”

The officers of the British Association have evidently heard of it, and have also learned that the American profession believe in the benefits derived from an interchange of ideas and experiences and have a commendable proclivity for attending medical meetings for that purpose. They are evidently afraid, and perhaps justly so, that they will be completely swamped at Montreal by the American contingent.

The committee of honorary local secretaries has candidly set forth the situation in a communication to the *Medical Record*. In this the committee points out the fact that it is doing all in its power to have as many friends present as can safely be invited. Not more than a few hundred Old-country members can possibly be expected, Canada with her sparce population will be represented by hundreds not thousands, and the other British colonies and dependencies by a limited number of delegates; “and were we to throw the meeting open to the medical men in attendance upon the sixty-six million inhabitants of the United States, the whole character of the meeting would be destroyed—it would no longer be a meeting of the British Medical Association, but would assume the nature of an American medical congress with British officeholders.”

For the British Medical Association to be so completely swallowed up the first time it ventures out of the confines of its sacred dominions would be sad indeed. If, however, it be true that many practitioners, especially in the West, were intending to neglect the meeting of the American Medical Association in Philadelphia, reserving their time and money for a trip to Montreal, the danger was imminent, and they do wisely to anticipate it. With the meeting of the Congress of American Physicians and Surgeons at Washington in May, and that of the American Medical Association at Philadelphia in June, sufficient opportunity will be afforded this season for indulgence in the American proclivity and for the craving for scientific pabulum to be amply satisfied. We heartily endorse the suggestion of the *Record* when it says: “We sincerely hope that no American will be seen in Montreal at the meeting of the Association who does not go as an official delegate from some society empowered to send him, or in response to a personal invitation from some one in authority.”

ECHOES AND NEWS.

Dr. T. A. Emmet Honored.—The Council of the College of Notre Dame, at South Bend, Ind., has conferred on Dr. Thomas Addis Emmet of New York the Laetare medal. This is in accordance with the annual custom of the institution to do honor to some eminent American Roman Catholic.

Antitoxin—American Pediatric Society.—The collective investigation (report) will be kept open until April 10th, in order to secure returns of all cases beginning before April 1st. The committee desires to express its appreciation of the trouble and pains the profession has been willing to take in this matter. The return blanks have been more complete and accurate than in the first report.

The New York County Society on Compulsory Reports of Phthisis.—This society, at its recent meeting, rejected the report of its committee sustaining the action of the Board of Health, and adopted the following: Resolved, that in the judgment of this society, the recent edict of the Health Department in relation to the compulsory reporting of cases of tuberculosis is unnecessary, inexpedient, and unwise.

Opening of the New Lecture Room of the Boston Infants' Hospital.—On March 17, 1897, Dr. W. P. Northrup, Professor of Children's Diseases in the Bellevue Medical College of New York, addressed, by invitation, the students of the Harvard Medical School on "Tuberculosis in Children." The lecture was illustrated by lantern slides. It was a great success, and excited much interest.

Corsets Abandoned.—The latest exploit with the Röntgen rays is reported from Lisbon. It was at the instance of the Queen of Portugal, who takes a keen interest in science, that the ladies of her court submitted themselves to the searching action of these vibrations. The ladies have been startled at the sight of their distorted ribs and bones, the result of tight lacing. Henceforth they have determined to be free women. Corsets are to be cast aside.

A Barbarian Notion of Sanitation.—The natives of the village of Ixtlan, Mex., have taken a genuine Indian method of stopping the spread of smallpox, which appeared in that town. The first man to take the disease was the alcalde of the pueblo, and the Indians concluded that the place to stop it was at the fountainhead. They appointed executioners, who went to the house of the alcalde and beat him to death, and then set fire to the house and burned it and everything that was in it, including the body of the murdered man.

Hospital Shaken by an Earthquake.—Shortly after midnight on March 27th Montreal was visited by a startling earthquake, the second within the week. Its force was thought to have been especially great in the vicinity of the Notre Dame Hospital. The chimney-caps were thrown to the sidewalk and the walls of the building severely agitated. The inmates were greatly demoralized by the shock which aroused them suddenly from their slumbers, and order was with difficulty restored by the sisters and house-staff.

Fanaticism in Bombay.—One of the London daily papers prints a despatch from Bombay, which says that the fanatical Mohammedans there display the bitterest opposition to the measures taken by the government for suppressing the bubonic plague. For instance, a Mohammedan, while leaving the city with his wife, refused to allow her to submit herself to the prescribed inspection. The officials insisted, whereupon the Mohammedan suddenly drew his dagger and stabbed her to the heart. Then he stabbed the official physician and attempted to kill himself.

The Widal Agglutination Test for Typhoid Fever.—Dr. Wyatt Johnston recently stated that in the application of this test to more than six hundred cases his confidence in its reliability had not been in any degree diminished. The peculiar reaction was occasionally delayed until the fifth day, and in rare instances would disappear after the fifteenth day. Certain somewhat similar reaction had also been observed from the blood of patients ill of other diseases, but a little experience should enable the careful observer to recognize the characteristics of the typhoid reaction from any of these.

The Bald Man's Bacillus.—Dr. Sabourand has reported to the Dermatological Society of Paris that premature baldness is chiefly due to the ravages of a bacillus which takes up its abode in the fatty cells lying about the roots of the hair. Whether this parasite consumes the nutriment provided by nature for the support of the capillary crop or secretes a "toxin" that is fatal to the hirsute growth seems to be as yet undecided. The eminent physiologist has succeeded in cultivating the creature after the most approved Pasteurian methods, and a sheep inoculated with the virus showed bare patches of a most gratifying nature. The next step will be to develop an antitoxic serum and immunize the descendants of the occupants of the "baldheaded row."

Guilty of Having "Knock-out" Drops.—Charles Guichard, a jeweler's apprentice, was convicted in General Sessions March 24th of having "knock-out" drops in his possession. It was the first conviction under the law passed March 9 making it a felony for any person other than a regularly licensed physician to have poisonous or anesthetic drugs in his possession. Guichard's offense was committed March 11. He went to a drug store in Bleecker street and offered the clerk $15 for some hydrate of chloral, vulgarly known as "knock-out" drops. The clerk told him to come back later, and in the meantime notified the police, who waited until Guichard had put the mixture in his pocket, and then arrested him. Guichard's defense was that he had bought the drug for a woman, who offered him $50 for it. The maximum penalty for the crime is ten years in State prison.

Hygienic Measures Before the New York Legislature.—The committee on public health has under consideration a bill prohibiting the cutting of ice for any purpose within one thousand feet of the outlet of any sewer, or within or opposite the corporation limits of any city or town having over fifty thousand inhabitants. The committee on ways and means is considering a bill requiring that every building or room occupied as a butcher's shop, meat market, or fish market, or in which meat or fish intended to be used for food is exposed for sale or stored, shall be under the jurisdiction and subject to the inspection of the factory inspector, or a deputy factory inspector duly authorized by him. The factory inspector may adopt such rules and regulations in relation to the construction, ventilation, drainage, plumbing, and maintenance of such buildings or rooms as he deems necessary to secure the healthful, cleanly, and sanitary condition thereof.

Obituary.—Dr. Douglas Ewell died on March 24th, in his apartments, in New York. He was thirty years old and unmarried. He was born in New York, and was demonstrator of anatomy at the College of Physicians and Surgeons. He was also connected with Roosevelt Hospital.—Dr. Thomas Scott Lambert of New York, who died last Sunday at Stamford, Conn., was widely known several years ago as a writer and lecturer on educational and physiological topics. "Lambert's Anatomy" was a text-book in the public schools of various large cities between thirty and forty years ago. Dr. Lambert was born near Boston, Mass., on May 22, 1819; was educated at Williams College, and took his degree in medicine at Castleton, Vt. He became a specialist in anatomy and physiology, and spent the greater part of his life in lecturing on those subjects. He published his text-book on anatomy about forty-five years ago, and in recent years he undertook to revise that work, but his mental faculties became impaired by overwork, and he spent the latter part of his life in a quiet retreat in Stamford.

Antitoxin of the Bubonic Plague.—Dr. A. H. Doty, Health Officer of this port, assisted by Dr. T. D. Fitzpatrick, has been experimenting to discover an antitoxin for the bubonic plague, and recently made a report to the New York Health Board. In the report he says: "On February 26 a horse was inoculated with a culture of plague bacillus. This was repeated on March 4 and 9. In order to determine how early the serum might have acquired antitoxic qualities, about a pint of blood was drawn from the horse on March 15 for experimental purposes. From this, one-half a pint of serum was secured. Several white mice were each injected with one cubic centimeter. After thirteen hours they were inoculated with a culture of the plague bacillus. These all remained alive. Several into which serum was not injected, when thus inoculated, died, showing the efficiency of the serum in the cases of those that lived. These results would indicate that the serum in this horse will surely be both preventive and curative."

The Medical Buckeye Flyer.—Arrangements have been made for a special train, which will be known as the "Medical Buckeye Flyer," which will be made up of Pullman palace cars, for the accommodation of those who cannot conveniently reach the *Journal* Special on account of the locality in which they live. This train will go via Columbus, Ohio, where it will be joined by many of the military surgeons, who hold their annual meeting in that city just prior to the meeting of the American Medical Association. It will be a through train, without change of cars, to Philadelphia, over a route both picturesque and historic. Reduced rates will be made and the best of accommodations provided, care being taken with regard to the comfort of the passengers in avoiding overcrowding of cars. Stop-over privileges at Washington have been arranged for without extra charge. Those who desire to take this train will receive further information by addressing DR. R. HARVEY REED, Columbus, Ohio.

The New York Academy of Medicine and the Control of Tuberculosis.—The committee appointed by the Academy of Medicine to consider the question of the control of tuberculosis presented its report, which was adopted, as follows: (1) In the opinion of this committee, the Board of Health might wisely delay the enforcement of compulsory notification, but should adopt more stringent measures for the care of sputum in factories, workshops, tenement-houses, ferry-boats, places of public assemblage, and public conveyances. (2) The establishment and maintenance by the city of a hospital or hospitals, to which indigent tuberculous patients may be admitted, is advisable. (3) This committee recommends the appointment by the Legislature of a commission for the establishment and management of sanatoria in healthy country districts in this State for the care of the indigent tuberculous patients in the early stage of the disease. (4) This committee commends to the State Board of Health the importance of the careful regulation of the sanitary condition of hotels and sleeping-cars throughout the State. E. G. JANEWAY, M.D., Chairman; T. MITCHELL PRUDDEN, M.D., Secretary.

New York School Physicians and School Inspectors.—Some confusion has arisen in medical circles in regard to these two classes of public servants. The positions and duties are entirely distinct. The duty of the inspectors, of whom there are one hundred and fifty, is to visit their respective schools at nine o'clock every morning during the session. Upon assembling in the morning, every child that appears ill, or who presents himself for the first time after being absent, is sent to a special room, where he is inspected. If found attacked by an infectious or contagious disease, or not fully recovered from one, the inspector sends him home, with a note to that effect, and at the same time informs the Board of Health of the fact. The salary of the school inspector is thirty dollars per month. The duty of the physicians, of whom there are ten, is to examine all applicants for positions as teachers in the public schools. Like the police and fire departments, the Board of Education requires of all applicants for positions on the teaching staff a certificate from one of the school physicians attesting to the physical soundness of the applicant. The following have been appointed school physicians for the year 1897: W. Gill Wylie, Samuel M. Brickner, John G. Truax, P. J. Lynch, Josephine Walter, John Rogers, Jr., Clement Cleveland, Matthias Nicoll, Jr., Alexander Lambert, A. M. Jacobus. The fee for each examination is $3.

Dr. Koch's Rinderpest Cure.—In his recent report to the Department of Agriculture, Dr. Koch says that the blood serum of cattle which have recovered from rinderpest has a certain immuning effect upon healthy stock when inoculated with it. Its protective properties, however, are not very great, for 100 cubic centimeters of such serum are required to protect an animal against an inoculation with a small dose of rinderpest blood. This immunity is in its nature merely a "passive" one, and will only last during a short period. "For protective inoculation on a large scale such serum is not applicable, but I succeeded in immuning within a fortnight several animals by means of a mixture of serum and virulent rinderpest blood to such a degree that they were enabled to withstand an injection of twenty cubic centimeters of rinderpest blood, a ten-thousandth part of which is a fatal dose. A second and equally important fact is that one is able to render immune healthy cattle with the bile of such as have succumbed to rinderpest. In this case, only one hypodermic injection of ten cubic centimeters is sufficient. This immunity sets in on the tenth day at latest, and is to such an extent that even four weeks afterward forty cubic centimeters of rinderpest blood could be injected without any injurious effect. I therefore conclude that the immunity produced in such a manner is of an "active" nature. The local result of an injection is merely a hard, somewhat painful swelling of the size of a man's fist, which gradually disappears in the course of a few weeks, provided, however, that the bile is not in a state of decomposition, as is not uncommon when an animal suffers from rinderpest."

The Regulation and Control of Dispensaries.—The following bill has been introduced in the New York Legislature:

"Section 1. A 'dispensary' is hereby defined to be a place, established by any person, persons, or corporation, for the practice of medicine and surgery, and to give medical and surgical aid or treatment gratuitously to poor persons who are unable to pay therefor.

"Sec. 2. No person shall apply for such treatment in any dispensary, nor shall any person, persons, or corporation conducting such dispensary, give treatment or medical aid to any person, unless such person so applying for such treatment shall be a poor person and unable to pay for medical treatment; and all persons who are entitled to be so treated shall be treated by such dispensary free from charge for services so rendered, and shall be furnished with the necessary medicines or appliances required by such treatment.

"Sec. 3. In no case shall any person, persons, or corporation conducting such dispensary, directly or indirectly receive any pay or compensation whatever for the treatment of any such persons entitled to be so treated, nor be entitled to or receive any pay or compensation for the medicines or appliances so furnished, and no person who is not a poor person shall be so treated in such dispensary, except in cases of emergency.

"Sec. 4. No dispensary shall be carried on or conducted in any place, commonly known as a drug store or a place for the sale of drugs or medicines, nor shall the same be carried on in any place commonly known or defined by law or by the rules and regulations of any health board or health department as a "tenement-house."

"Sec. 5. All persons desiring to avail themselves of the right to be so treated in any such dispensary shall produce to the person, persons, or corporation so carrying on said dispensary a certificate in writing from the owner or owners of the premises wherein said person resides, or from the police captain or person in charge of the police district or precinct in which he or she resides, or from the alderman of the district, or from any charity organization, that the said applicant is a poor person, unable to pay for medical treatment or medicines; and such writing shall be in the form prescribed by such dispensary, and be of no force and effect after the expiration of thirty days from the date thereof.

"Sec. 6. Any person who shall apply to such dispensary to be treated who is not a poor person, or shall obtain treatment or medical aid at such dispensary when he or she shall not be entitled thereto under the provisions of this act, the person so applying or so receiving such treatment or medical aid, and any person or persons who shall aid such person so applying to be treated in such dispensary, or who shall sign such certificate, knowing that such person so applying to be treated is not a poor person, shall be deemed guilty of a misdemeanor.

"Sec. 7. Power and authority is hereby conferred upon the societies known and designated as follows, namely: The New York County Medical Society, the New York Homeopathic County Medical Society, New York Eclectic County Medical Society, New York County Medical Association, the New York Medical Society for Advancing the Practice of Medicine, the Harlem Medical Society, the Eastern Medical Society, the German Medical Society of the City of New York, and the United Charities of the City of New York, under the certificate of appointment signed by its president and secretary and attested to by its corporate seal, to nominate and appoint one person who, with the persons to be selected by all of said societies, shall compose a board to be known as the 'Medical Board for the Supervision of Dispensaries Within the City of New York,' and such board shall have power to make such rules, regulations, and by-laws for its organization, government, and management; to adopt such rules and regulations with reference to the establishment, management, mode, and manner of carrying on and conducting such dispensary, and provide for the supervision thereof, and to adopt such rules and regulations with regard thereto as in the judgment of said board may be necessary for carrying out and giving force and effect to the provisions of this act, and upon the adoption thereof to cause the same to be distributed among such dispensaries, and all such dispensaries now in existence or hereafter to be established shall be subject to such rules, regulations, and by-laws, and subject to the supervision of the said board. Any vacancy in said board shall be filled by an appointment by the society to which the member belongs whose death, resignation, or inability to act created the vacancy.

"Sec. 8. Any person or persons or corporation so conducting or carrying on a dispensary, and violating any rules, regulations, and by-laws so made by said board after notice of the adoption thereof, and who shall fail to comply with any of such rules, regulations, and by-laws so adopted by said board, may be prosecuted by said board, or any officer thereof, and, upon conviction thereof, be deemed guilty of a misdemeanor, and shall be punished by a fine of not less than fifty dollars or more than two hundred and fifty dollars, or by imprisonment of not less than one month or more than six months, or both such fine and imprisonment for the first offense, and six months imprisonment for each subsequent offense.

"Sec. 9. The husband and wife shall be jointly and severally liable to pay for professional services of a physician rendered to them, or either of them, or any member of their family, and the joint or several property of the husband and wife shall be liable to levy and sale under an execution upon such judgment, except such property as may by law be exempt from levy and sale under an execution.

"Sec. 10. This act shall take effect immediately."

CORRESPONDENCE.

THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: May I call the attention of those of your readers who are thinking of coming to Philadelphia to attend the semi-centennial meeting of the American Medical Association to be held June 1, 2, 3, and 4, 1897, to the fact that there will be, in addition to the American Medical Association, at the same time a large mercantile convention, which will, to a certain extent, utilize a considerable number of the rooms in the various hotels. For this reason, it is advisable that physicians who intend to be present at the meeting should write at once to one of the following hotels engaging such rooms as they desire at the rates named:

HOTEL WALTON, Broad and Locust streets; $1.50 and upward per day, European plan; $4 and upward per day, Amercan plan.

THE COLONNADE, Fifteenth and Chestnut streets; $1 and upward per day, European plan; $3 and upward per day, American plan.

THE LAFAYETTE, Broad and Chestnut streets; $1 and upward per day, European plan; Table d'Hote: breakfast, 25 cents to $1; luncheon, 75 cents; dinner, $1.25.

THE BINGHAM HOUSE, Eleventh and Market streets; $2.50 and upward per day, strictly on the American plan.

HOTEL STENTON, Broad and Spruce streets; $2 and upward per day, European plan; $4 and upward per day, American plan.

THE CONTINENTAL, Ninth and Chestnut streets; $3 and upward per day, strictly on the American plan.

THE WINDSOR, Eleventh and Filbert streets; $1 and upward per day, European plan; $2 per day, American plan.

THE STRATFORD, Broad and Walnut streets; $1 and upward per day, European plan only.

GIRARD HOUSE, Ninth and Chestnut streets; $2.25 to $3 per day, strictly on the American plan.

HOTEL HANOVER, Twelfth and Arch streets; $2.50 per day, strictly on the American plan.

ALDINE HOTEL, Chestnut street, above Nineteenth; special rates to members of the American Medical Association, $2.50 per day on the American plan; $1 to $3 on the European plan.

The price quoted in each instance is for one person only. Rooms commanding only the lowest price are naturally limited in number. It is especially desirable that each member intending to be present at the meeting shall personally, or by letter, make his arrangement with the hotel at which he desires to stop. It is worthy of note that the rate of $1.50 per day at the Hotel Headquarters, the "Hotel Walton," is the rate for two people in one room.

All these hotels are within a few blocks of the meeting places, and most of them are within two blocks.

As a sub-committee of the general Committee of Arrangements has arranged clinical courses in all branches of medicine at the various teaching institutions and large hospitals during the week prior and following the week of the association meeting, it has been thought that a considerable number of physicians would be glad to embrace the opportunity of brushing up upon the various branches by attendance on these courses, for which no charge will be made by the gentlemen giving them, and as their stay in this city will therefore be more than a few days, it has occurred to the committee that some of the visiting physicians may wish to take rooms at some good boarding house. The Chairman of the Committee on Reception and Accommodation, Dr. G. E. de Schweinitz, 1401 Locust street, will be glad to send the addresses of such boarding houses to gentlemen desiring to stay here for a week or more.

The large number of gentlemen who have already signified their intention of attending the meeting, and the very large number of able and interesting papers already placed upon the section programs, indicate that this will be the most important meeting which the Association has ever had, and it is hoped that every physician who is a member of a regularly organized county medical society will make an effort to attend. The meeting halls for the various sections are situated so close to one another that different papers in different sections can be readily listened to during a single morning's session by those who do not wish to devote their time to one particular specialty.

Very truly yours,

H. A. HARE,
Chairman of the Committee of Arrangements,
American Medical Association.

PHILADELPHIA, March 24, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

THE ANNUAL COST OF ENTERIC FEVER—NEUROLOGICAL SOCIETY OF PHILADELPHIA—PATHOLOGICAL SOCIETY OF PHILADELPHIA—PHILADELPHIA COUNTY MEDICAL SOCIETY—ELECTIONS TO THE EPISCOPAL HOSPITAL STAFF.

PHILADELPHIA, March 27, 1897.

A FORCEFUL illustration both of the mortality from, and the monetary expenditure due to, enteric fever may be found in the statement made by Professor Mason of the Rensselaer Polytechnic Institute, in a recent lecture before the Franklin Institute, to the effect that the annual money loss in Philadelphia from typhoid fever is computed at more than one and one-quarter million dollars. In the five years, from 1890 to 1895, the average number of deaths annually from this disease was 523, and, rating each life as worth $2000, it will be seen that $1,046,000 of the estimated sum is accounted for, to which must be added the cost of 523 funerals at the low estimate of $25 apiece, making a total of $1,059,075 for those cases which end fatally. So much for the fatal cases; but Professor Mason does not forget that for each death from typhoid there are at least nine recoveries. Thus, 4707 recoveries, each ill for forty-three days (the average length of the disease as shown by an analysis of 500 cases in the Pennsylvania Hospital) take out of the taxpayers' pockets $202,401, reckoning each individual as earning one dollar a day. For physicians' fees and for nursing, at $25 for each case, for the total number of cases ill from the disease, $130,750 more is spent. The aggregate foots up the large total of $1,592,226; and, inasmuch as a system of water filtration, which would largely eliminate this waste of lives and money, is one of the questions of the hour in this city, the above statement appears to be especially timely. The consequences of a polluted water supply may not particularly impress our city legislators, when viewed from a standpoint of humanity, but can these figures of Professor Mason's, stated in cold dollars and cents, fail to impress the average practical politicians?

At a meeting of the Philadelphia Neurological Society, held on the 22d instant, Dr. Charles K. Mills showed two interesting cases of hereditary tremor. One case was that of a man in whom tremor of the head was present, apparently being produced by excitement, and allayed in a measure by recourse to alcoholic stimulation; the other case was one of tremor affecting the arms and head, in a girl of seven years. Dr. Mills, in his remarks on these cases, was inclined to look on them as diplegia, rather than tremor.

A case of isolated, bilateral paralysis of the abducens nerve, following an injury to the mastoid process was presented by Dr. A. G. Thomson. Dr. James Tyson, in the discussion following a paper by Dr. Joseph Leidy on neuralgia of the cranial nerves as a symptom of uremia, claimed that neuralgia of this type, being so common to other conditions, could not be considered at all conclusive, and added that the result of the urinary analysis would readily determine the condition.

Among the papers read at a meeting of the Philadelphia County Medical Society, held on the 24th instant, was a communication by Dr. H. A. Hare on the value of intravenous injections in the treatment of toxemia, giving the reports of two cases, one diabetic, the other uremic, in which he had employed this measure. The former case, a diabetic, of advanced years, with gangrene of the toe, during an acute toxemia received an intravenous injection of one quart of salt solution, and, after an improvement lasting twenty-four hours, died. The latter case, one of chronic parenchymatous nephritis, with widespread edema, and symptoms of uremia, improved after receiving two injections of one quart each, administered at intervals of ten days. Dr. Hare thought that the danger of air embolism from intravenous injections was overestimated, and stated that in neither of the cases quoted above were there any symptoms of a dangerous character, although air emboli were produced in both. An instance of remarkable deformity of the fingers from gout was also shown by Dr. Hare. The case was being treated by the hot-air method, with astonishing improvement, the nodules becoming a healthy red color—not the discoloration of an inflammatory process—softer, and partially absorbed, and there was much freer movement of the affected fingers. Two days after the beginning of the treatment, the patient had an acute, widely distributed attack of gout, which was perhaps due to the absorptive action of the high temperature, which at times reached 310 F., on the sodium urate deposits, in consequence of which they were melted down, and carried to other parts of the system. An interesting point in connection with this case was the fact that a skiagraph of the patient's hands showed that the Röntgen ray passed through the sodium urate deposits, evidences of these nodules being wanting in the print.

Dr. A. E. Roussel reported four cases of glandular fever occurring in the same family. His remarks pertained to the infectious nature of the unusual malady, to the differential diagnosis between it and scarlet fever, mumps, and the various forms of adenitis, and included a comprehensive review of the literature of the subject. Dr. J. C. Wilson, who opened the discussion on Dr. Roussel's paper, was inclined to urge caution in accepting a new nosological entity, and thought that some relation could perhaps be made out between glandular fever and scarlet fever.

At the last meeting of the Pathological Society, held on the 25th instant, Dr. A. E. Taylor reported the blood changes which occurred in an individual who had ingested several ounces of tri-nitro-benzol. Marked alteration in the staining properties of the neutrophilic granules was noted, these granules becoming oxyphilic, and staining readily with eosin, and with aurantia. There were no evidences of hemolysis, the erythrocytes staining normally, nor was there hemoglobinemia. When the patient recovered from the poison, twenty-four hours later, it was found that the granules of the polymorphonuclear leucocytes had resumed their accustomed reaction toward the neutral elements of the triple mixture.

Dr. H. L. Williams exhibited a dermoid cyst of the ovary, containing four teeth, a large roll of hair, and a a well-developed mammary gland with the nipple.

Dr. G. A. Muehleck reported a case of primary carcinoma of the thumb, and gave the statistics bearing on this infrequent lesion. Dr. Muehleck took the view that carcinomata of this locality, in contradistinction to sarcomata, gave a favorable outlook.

Kaiserling's method of preserving the color of pathological specimens was spoken of by Dr. J. P. Crozer Griffith, who detailed the technic of the process, and gave his experience with its use in a number of instances.

Other communications at this meeting were made by Dr. Joseph McFarland, who showed several phleboliths from the pelvic veins of a case of malignant disease of the pelvis, and by Dr. D. Riesman, who reported a case of amyloid degeneration of the suprarenal body, without pigmentation of the skin, or other symptoms of Addison's disease.

At a meeting of the Managers of the Episcopal Hospital, held on the twenth-fourth instant, Dr. Elliston J. Morris was elected Visiting Physician to the hospital; Dr. Clarence J. Garitee, Physician to the Medical Dispensary; and Dr. Charles H. Weber and Dr. Eugene Stadelman, Resident Physicians.

OUR PARIS LETTER.

[From our Special Correspondent.]

FRAENKEL'S TREATMENT OF LOCOMOTOR ATAXIA—MOTSCHUTKOWSKI'S SUSPENSION TREATMENT FOR TABES.

Paris, March 10, 1897.

Fraenkel, whose treatment of the incoordination of locomotor ataxia attracted considerable attention when he first began to practise it at Heiden in Switzerland, has been for nearly a year now demonstrating his method on patients at the Salpétrière in Paris. His success has been such as to warrant the belief that his method of treatment carefully, patiently, and properly applied, will do much to relieve the most distressing symptoms of tabes in the great majority of cases. When he first came to the Salpétrière some of the worst cases of ataxic incoordination in the service were put in his hands for treatment. Two of the patients had been bedridden for years, but all were distinctly improved after treatment. One of these, a woman who had not stirred from her bed for six years, now is able to go out into town alone with the help of a single cane. She can go up and down stairs, and can even walk with her eyes shut, yet the other symptoms of tabes remain (the absence of knee-jerks, the Argyll-Robertson

and there seems never to have been an hys-

bility, are devoid of proper sense of muscular fatigue, and may easily be encouraged to pursue exercises that cause exhaustion rather than education of muscles. The impaired nerve paths quickly resent the passage of unaccustomed impulses, and the intensity of attention required to carry out the exercises properly soon induces cerebral fatigue. For these reasons Dr. Fränkel insists that patients should not be asked to exercise for more than ten minutes at a time, with an interval of at least ten minutes, after which the motions may be repeated once more, usually not oftener. Twice a day such a *séance* of a half hour may be given. Exactitude in the accomplishment of the motions decided upon is the whole secret of the treatment.

When patients are bedridden, or when they are not easily able to stand up during the exercises, the purpose of the motions may be made more definite by putting around one leg a garter to which, in place of a buckle, is affixed a metal plate. The heel of the other foot is made to touch this plate, placed at different heighths on the leg, until the patient can accomplish the purpose readily even with eyes closed. Variety in the exercises is to be sought for, for they must be continued for weeks, sometimes for months, and Fränkel insists that the true end of the exercises must never be allowed to sink out of view. Not muscular exercise in the ordinary sense of the word, such as may be obtained from the repetition of any movement, is the end, but the reeducation of muscular attention by the careful repetition of movements with an exact and definite purpose.

Usually, patients themselves are very much encouraged from the outset. At the end of about two weeks there is a distinctly noticeable improvement in the coordination of movements which they have been practising, and this improvement continues for some time, until a certain stage of coordination, dependant on the extent of the disease, is reached. Whatever is gained remains as long as the disease itself remains stationary. Further progress of the disease will demand renewed education of the muscular sense, and at times their progress in coordination will render latent the advance of the sclerotic process in the cord.

For the more exact coordinate movements required of the hands, such as writing, for example, much finer and and more detailed exercises are required. It is surprising to see, however, how much improvement may be obtained in handwriting after a careful course of exercises in tracing various curved, spiral, and angular figures. In other relatively delicate movements for ataxics, such as grasping small objects, buttoning clothes, etc., the same improvement is noticeable after a course of exercises directed more especially to these ends, such as grasping at a given signal variously colored swinging balls, or picking out variously sized objects from a number scattered over the table.

As to the cases in which the treatment, when applicable, does not succeed (and they are rare), they are mainly those in which the intensity of attention required to direct the movements through the diseased nerve-fibers is too great for the patients to accomplish the effort demanded

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standpoint the majority of the cases should treated by appropriate caustics in preference to removal by incision, and I take this opportunity o again stating my firm conviction of the correctnes of the view stated and defended at that time.

Although all authorities are agreed that ear treatment is proper and advisable in all cases c cancer, yet I can assure you that in an experience c many years, during which I have paid a great dea of attention to the subject, the majority of the case which have come under my observation have had a unquestioned existence of many months or years, th disease being heedlessly allowed to progress to suc an extent as often to have caused much deformity (deep and wide destruction of tissue, or even to th production of lymph-gland infection, although, as rule, the patients have been more or less under th observation of one or more physicians. On accou of this experience I have thought it proper, and po sibly of some advantage, to discuss the value and in portance of early treatment of cutaneous maligna epitheliomata, and to urge anew upon the professi

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[1] Read at the meeting of the Northwestern Medical and Surgi Society, December 16, 1896.

of them. Dr. Fränkel points out that they are almost always people who have been characteristically awkward in their preataxic life, and whose general muscular sensibility is supposably congenitally impaired, capability for delicate movements being the nice adjustment between muscular sense and muscular motility.

In a certain number of cases the treatment is distinctly contraindicated. In acute tabes, where the pains are almost continuous, it would do harm rather than good, and when tried has always led to aggravation of symptoms. In patients suffering from arthropathies it is also contraindicated, or where for any reason there is suspected to be present that abnormal friability of the bones that causes so-called spontaneous fracture. Where severe vesical trouble exists, with a tendency to frequent recurrence of vesical crises, absolute tranquility is the only thing for the patient. Any amount of movement leads inevitably to aggravation of the extremely troublesome symptoms.

While putting the large number of tabetic patients that he has had through the movements Fränkel has found and described an additional symptom of tabes. It is the muscular relaxation that enables tabetic patients to put their joints in positions of hyperextension and hyperflexion that are impossible to normal persons. The hyperextension at the knee that gives tabetics the backward curve to their legs when extended has often been noted. A similar state of the muscles around the hip-joint and in the leg below it enables tabetics to place their legs at full length and without flexion of the knee in paralleiism with the trunk, or at least in a state of flexion, that is far beyond normal. Here in France, where symptoms are invariably connected with their discoverer's name, this condition of affairs is known as the Fränkel symptom, or muscular hypotonia. Its discoverer claims that it exists in the preataxic stage in a noticeable degree, and that it may be a valuable symptom of the incipiency of the disease.

The whole of Fränkel's work seems to bring out clearly the truth of what Marie stated so frankly in a lecture on tabes not long ago. Those who regard tabes as a disease, whose nosography is definite and determined, are reckoning without the suggestive developments that are constantly arising in connection with it. Fränkel's book, which I believe is soon to appear in German and French, will be welcomed by those who realize that it may shed new light on the practical side of the most interesting of nervous diseases.

Something about other therapeutic measures that are employed here in the treatment of nervous diseases may be of interest to the readers of the MEDICAL NEWS. Motschutkowski's suspension treatment for tabes is spoken of in terms of highest commendation on all sides. In certain cases it gives really marvelous results. The pains are rendered less severe and less frequently recurrent, the incoordination often becomes less noticeable, sexual potency returns, especially in young subjects, and the further progress of the disease seems to cease, at least for a time. At the Salpêtrière, by carefully limiting the length of the *séances* according to the patient's sensations, and only lengthening them very gradually by not allowing their too frequent repetition, and by avoiding entirely the application of the treatment in cases where there is serious heart disease, or considerable obesity, or where the patient experiences a painful sense of giddiness during or after the suspension, the serious results that have sometimes been reported from the treatment are never seen.

For the pains of locomotor ataxia a combination of phenacetin and antipyrin has been found more serviceable and productive of less annoying counter-symptoms than either of the drugs alone. Here no other drug is given or has been found of any use in tabes, though at Queen's Square Hospital for Nervous Diseases in London I found the use of chlorid of aluminium in 3-grain doses considered to sometimes lessen the troublesome symptoms of the disease and retard its progress. One is reminded of the oft-reported good derived from its chemical congener, the berated and overrated chlorid of gold and sodium in America.

SOCIETY PROCEEDINGS.

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting held Thursday Evening February 18, 1897.

The President, EDWARD G. JANEWAY, M.D., in the Chair.

A paper entitled

THE USE OF MODIFIED MILK IN HEALTH AND DISEASE

was read by THOMAS M. ROTCH, M.D., of Harvard University. (See page 417).

DISCUSSION.

here were no evidences of hemolysis, the erythrocytes staining normally, nor was there hemoglobinemia. When the patient recovered from the poison, twenty-four hours later, it was found that the granules of the polymorphonuclear leucocytes had resumed their accustomed reaction toward the neutral elements of the triple mixture.

Dr. H. L. Williams exhibited a dermoid cyst of the ovary, containing four teeth, a large roll of hair, and a a well-developed mammary gland with the nipple.

Dr. G. A. Muehleck reported a case of primary carcinoma of the thumb, and gave the statistics bearing on this infrequent lesion. Dr. Muehleck took the view that carcinomata of this locality, in contradistinction to sarcomata, gave a favorable outlook.

Kaiserling's method of preserving the color of pathological specimens was spoken of by Dr. J. P. Crozer Griffith, who detailed the technic of the process, and gave his experience with its use in a number of instances.

Other communications at this meeting were made by Dr. Joseph McFarland, who showed several phleboliths from the pelvic veins of a case of malignant disease of the pelvis, and by Dr. D. Riesman, who reported a case of amyloid degeneration of the suprarenal body, without pigmentation of the skin, or other symptoms of Addison's disease.

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ORIGINAL ARTICLES.

THE IMPORTANCE OF EARLY TREATMENT IN CUTANEOUS MALIGNANT EPITHELIOMATA.[1]

BY A. R. ROBINSON, M.D., L. R. C. P. AND S., EDIN.
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ATTENDING PHYSICIAN TO THE NEW YORK
CANCER HOSPITAL.

THESE remarks will deal principally with the pathologic processes of cutaneous malignant epitheliomata; a consideration of the nature of the changes taking place in the tissues of the parts affected by the disease; how far our knowledge of these changes explains its clinical symptoms and course; what advantage is thereby gained in making a judicious choice and proper application of therapeutic measures; and, furthermore, what assistance a knowledge of all these things brings in support of the view that has been formed upon clinical observation that the earlier a cancer is properly treated for its removal the greater are the chances of cure.

Two or three years ago I read a paper upon the treatment of cutaneous cancers, and endeavored to prove that both from a theoretical and practical standpoint the majority of the cases should be treated by appropriate caustics in preference to removal by incision, and I take this opportunity of again stating my firm conviction of the correctness of the view stated and defended at that time.

Although all authorities are agreed that early treatment is proper and advisable in all cases of cancer, yet I can assure you that in an experience of many years, during which I have paid a great deal of attention to the subject, the majority of the cases which have come under my observation have had an unquestioned existence of many months or years, the disease being heedlessly allowed to progress to such an extent as often to have caused much deformity or deep and wide destruction of tissue, or even to the production of lymph-gland infection, although, as a rule, the patients have been more or less under the observation of one or more physicians. On account of this experience I have thought it proper, and possibly of some advantage, to discuss the value and importance of early treatment of cutaneous malignant epitheliomata, and to urge anew upon the profession the necessity and moral obligation of the prompt and proper treatment of this disease. I am satisfied that whether a cancer be situated upon the lips or cutaneous surface, proper treatment at an early stage usually enables the physician to give a favorable prognosis. Upon these grounds I now venture to discuss the subject, and trust the reading of this paper will be justified by the great importance of the subject.

A cutaneous or other cancer is at first a purely local disease, and not a local manifestation of a constitutional or general condition, therefore, a complete removal of the primary lesion before the disease has invaded other parts of the body is equivalent to a complete removal of the cancer from the body. Accepting this view as correct, our task is to consider the natural history of the disease, how it arises and progresses in its destructive course, and the factors or conditions which favor a rapid extension and hasten a fatal termination.

Cancers of the skin are usually described as occurring in three clinical forms: the superficial discoid, the papillary, and the deep or infiltrating. This division is of some advantage from a clinical standpoint, although it is not absolutely correct, as a primarily superficial cancer may have become deep before coming under the observation of a physician, or a primarily deep one may have become superficial, or either may have become papillomatous.

An epithelioma may commence as a scaly, eczematous-like lesion, or as a vesicle, papule, wart, tubercle, or nodule, and only close observation will enable the diagnosis to be made in some cases. The view that the seat of origin gives a type of form to the growth, the deep-seated nodular forms arising from the glands and follicles of the skin, and the superficial discoid ones from the epidermis proper, is not always correct, as many of the deep-seated, rapidly infiltrating epitheliomata arise from the rete. Furthermore, clinical observation does not enable the physician to state in a given case the structure from which the disease started. The clinical forms rather depend upon the seat of growth, the rapidity of the epithelial proliferation, the direction of its extension, the resisting power of the surrounding tissues, as well as the inflammatory or other changes occurring in the tissues of the affected part.

In all cases of malignant epitheliomata there are:

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[1] Read at the meeting of the Northwestern Medical and Surgical Society, December 16, 1896.

1. An abnormal and excessive proliferation of epithelium.

2. The proliferation is an atypical one and is associated with the production of a poison which injures the surrounding tissues.

3. Changes, usually of an inflammatory character, occur in this surrounding connective tissue, lessening its resisting powers.

4. Invasion of the connective tissues by the new epithelial elements by way of the lymph-channels, and a tendency in the great majority of cases to secondary infection of lymphatic structures.

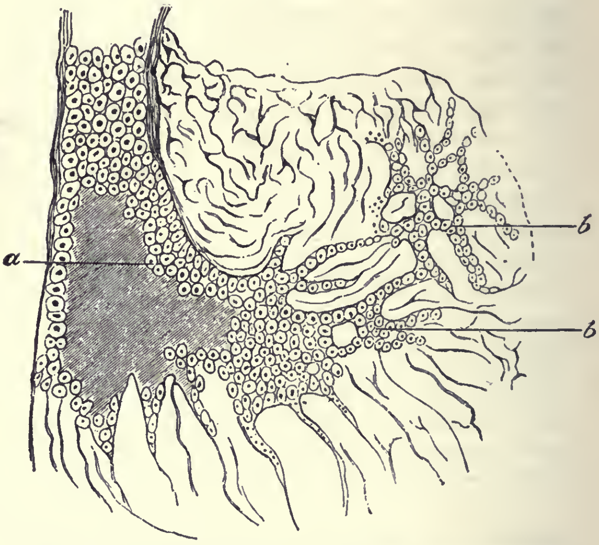
It seems that carcinomata contain a poison, a toxin—as shown by experimental injections and implantations of cancerous material—which injures connective tissues, differing in this respect from the benign epitheliomata. The more rapid the epithelial proliferation and the deeper seated the growth the sooner the connective tissue is likely to be invaded and lymph-gland infection to occur, since the amount of poison formed is in proportion to the rapidity of proliferation, and the injury to the connective tissue is in proportion to the amount of poison. As the *pars reticularis corii* offers considerable resistance to invasion as compared with the deeper and looser connective tissue, the deeper situated the cancerous growth the more rapid the invasion through the lymph channels.

Injury to the connective tissue of the part, from whatever cause, producing a more vulnerable condition of the tissue than that already caused by the epithelioma, favors a more rapid extension of the disease and should always be borne in mind when treating a case of this kind. The application, for instance, of a mild caustic, such as nitrate of silver, to an epithelioma, cannot destroy the growth except to a slight extent, even in the case of small and superficial cancers, but it acts injuriously upon the surrounding connective tissue, the nutrition of the part is lowered, and the vulnerability correspondingly increased, thus favoring epithelial invasion. How often have cases of epithelioma of the lip, skin, or cervix uteri assumed a rapidly progressive character in consequence of this meddlesome, injurious treatment? The method employed should always be effective and thorough; better no treatment whatever than one that is not only valueless for the object desired but hastens epithelial proliferation, invasion, and extension.

The epithelia of cancer can travel through lymph channels without causing any appreciable sign of inflammation in the part, or requiring a condition of inflammation to precede the invasion. This is shown particularly in connection with secondary invasion of the skin following mammary cancer. In some cases of slowly progressing superficial discoid epitheliomata the inflammatory changes may be scarcely observable to the unaided eye, and even on microscopical examination may present very slight signs of injury to the part—mostly signs of formative action, demonstrating that the resisting power of the connective-tissue has not been much impaired. If, however, the patient injures such an epithelioma by scratching, or in shaving, or by the use of a mild caustic, an erosion or ulcer forms, and the toxins from the pus organisms, intensifying the inflammatory process, increase the vulnerability of the corium and favor epithelial growth and invasion.

As this condition is liable to occur at any time, it follows that every epithelioma should be radically treated as early as possible after a diagnosis has been made. After ulceration has occurred and epithelial invasion is more advanced, the area to be destroyed in treatment for removal of the disease is greater and a reappearance of the disease more probable. In this connection it must be borne in mind that the pathologic epithelia are capable of independent locomotion and may travel some distance from the place of origin. In the deeper-seated forms the inflammatory changes are greater than in the superficial ones in consequence of the rapid proliferation of the epithelia and its consequent production of poison. As the resisting power of the deeper parts of the corium is less than that of the papillary portion the malignant processes always progress rapidly and soon invade the lymphatic glands; hence, such cases require early

FIG. 1.



Acinus of a mammary gland showing growth of cancer and infiltration of surrounding tissue (after Waldeyer).

a, Lumen of acinus with proliferating epithelium; *b*, epithelia traveling through lymph channels and infiltrating periglandular tissue.

treatment if a favorable result is to be obtained or to be expected.

Lymph-gland infection never occurs in rodent ulcer, and sometimes a superficial flat epithelioma may exist twenty years or longer without invading lymph glands, or even disappear without known surgical interference. When the epithelioma is situated upon the penis, lips, certain parts of the face, as just in front of the ear, infection is certain to occur, and takes place earlier than when the disease is seated upon the nose, ear, or eyelids. Of course an exception to this rule is occasionally observed.

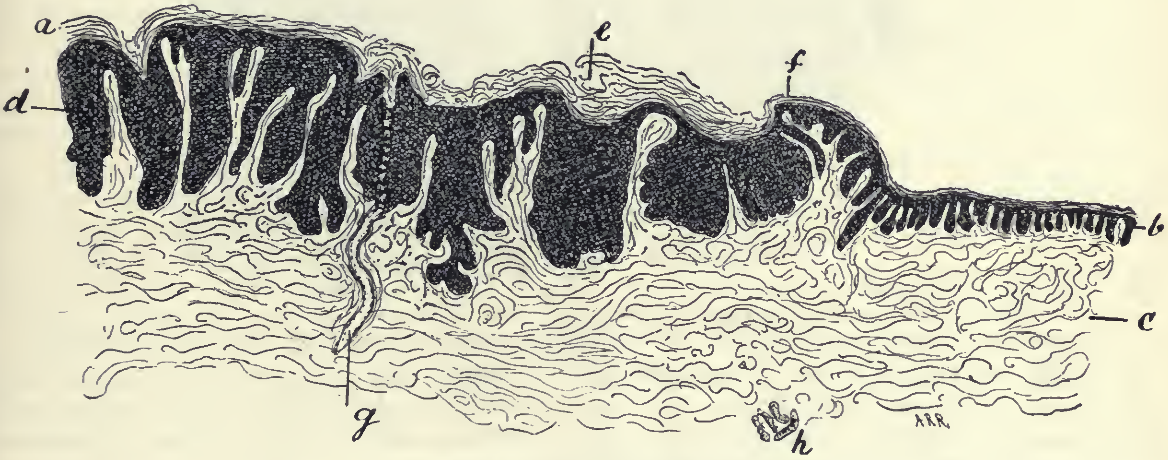
After these general considerations on the subject, let us consider the manner in which the disease extends at the seat of a primary lesion. In Fig. 1, from Waldeyer, is shown the manner of extension in cases of mammary carcinoma.

The drawing represents a terminal acinus and shows the epithelia arranged in an irregular, abnormal manner, and filling up the greater part of the lumen. The basement membrane of the acinus at its blind extremity has disappeared and the pathologic epithelia have invaded the periglandular tissue. The changes occur in the following manner: First, there is an abnormal proliferation of the glandular epithelium; then destruction of the basement membrane; and, finally, invasion of the surrounding tissue by way of the lymph channels. The drawing shows how the epithelia invade the tissues, as soon as the basement membrane is broken through, extending gradually in an irregular manner far into the periglandular tissue in the form of columns of epithelia or as single cells. Cancer elements had no doubt extended much beyond the limits of the section here represented. The most successful treatment for all cases of mammary cancer would clearly be amputation of the breast before the basement membrane has been penetrated, if a diagnosis could be made at that time. After that period the earlier the operation the greater the chances of being able to remove all of the disease.

The same method of extension, as above described, takes place in cutaneous cancer, where, with the exception of glands and follicles, there is no basement membrane to be penetrated. The majority of cutaneous epitheliomata start from the epidermis proper and not from the glandular structures. At first the growth is sharply limited, but sooner or later there is invasion of the corium and subcutaneous tissue. In Fig. 2 is shown, under a low power, a section of a very slowly spreading superficial epithelioma, which had already lasted several years, but still gave no signs of secondary lymph-gland infection.

The section shows the thickened epidermis and enlarged papillæ from downward growth of the rete. Note the slight change at the periphery as compared with the older part of the growth. The section includes a considerable piece of tissue—all beyond *f*—apparently normal to the naked eye. Microscopic examination showed atypical epithelial proliferation rather sharply limited at *f*, with epithelial invasion of the corium increasing in amount and depth toward the central part of the tumor. In these cases, as in cases of mammary cancer, there is first an atypical proliferation of the epithelium of the part, then invasion of the corium, slow at first, on account of the strong resisting power of the *pars reticularis corii*, and rapid when the deeper and looser connective tissue is reached. The same rule must hold true in these cases as in cases of mammary cancer, to wit: the earlier the growth is treated the more favorable the prognosis, and the less the deformity as a consequence of the necessary treatment.

Fig. 2.



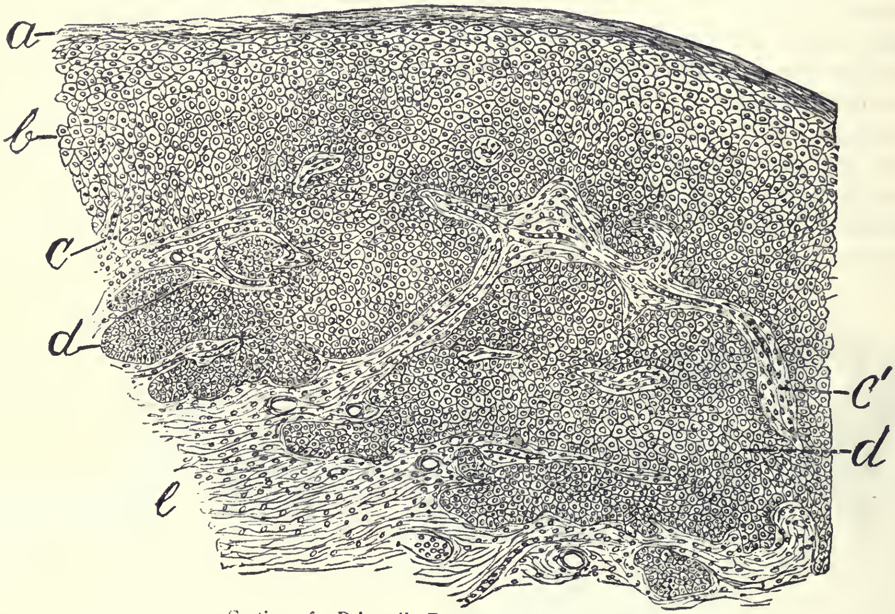
Section of a Superficial Cutaneous Epithelioma.

a, corneous layer; *b*, normal rete; *c*, corium; *d*, epitheliomatous growth from rete; *e*, hair follicle orifice area; *f*, macroscopical limit of morbid growth; *g*, excretory sweat-duct; *h*, coil of sweat-gland.

In the deep-seated nodular epitheliomata, the growth is much more rapid and the invasion of the corium occurs much earlier than in the form just described.

In these cases the surgeon should always act with promptness, lest secondary lymph-gland infection occur, and the case terminate fatally.

FIG. 3.



Section of a Primarily Deep-seated Epithelioma.
a, corneous layer; *b*, atypical rete; *c*, papillæ of corium; *d*, invading epithelial columns; *e*, corium with leucocyte infiltration.

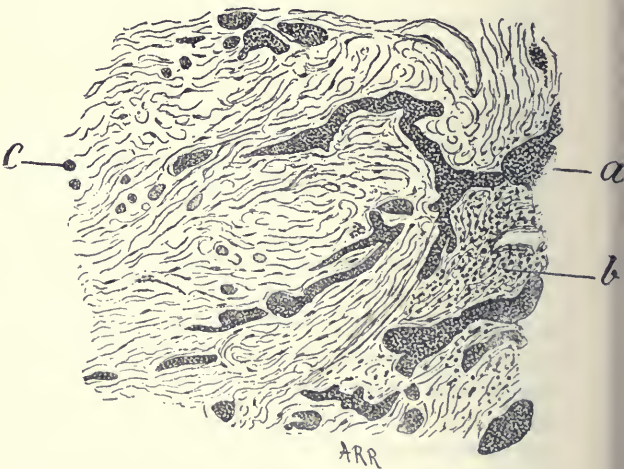
In rodent ulcer there is always atypical epithelial proliferation and invasion of the corium. The proliferation occurs slowly, and the individual cells seem to keep their filamentous connection with each other more than in the other forms of malignant epitheliomata. The invading cells usually form well-marked columns or cylinders, as shown in Fig. 4.

Having drawn your attention to the fact that in connection with the growth of the cancer, a poison is formed that causes inflammatory changes in the surrounding connective tissue; that the more the tissue is inflamed the easier it is invaded by the epithelia; that the greater and deeper the lymph-channel invasion the greater the danger of lymph-gland infection; it must appear clear to all that the earlier an epithelioma is treated the easier the task of removal, the less the necessary deformity from the operation, and the less the chances of a reappearance.

Let us, at the risk of some repetition, utilize the foregoing statements in a brief consideration of the clinical forms of epithelioma.

The superficial form can arise as a warty lesion, papule, erosion, or a scaly patch, and remain many years without attaining a greater size than that of a pea or bean. It shows a marked tendency to extension in a lateral direction, instead of in the depth, and, finally, may disappear spontaneously. I once saw a case in a man, now over eighty years of age, which I watched for fifteen years, the patient refusing treatment. During that period the ulcer spread over an area about two inches in diameter, never showing any signs of ulceration, although causing well-marked scar-tissue formation. Finally, it disappeared completely, after having traveled over a considerable part of the right cheek. I remember a case in a woman, about fifty years of age, in whom the disease had, within a few years, extended from one side of the forehead to the other, leaving a

FIG. 4.



Section of Peripheral Part of a Rodent Ulcer (Cylindrome).
a, columns of epithelia in lymph channels; *b*, small-celled infiltration; *c*, small column cut transversely.

cicatrix about three inches in length and one-third of an inch in diameter, and finally disappearing spontaneously. If all cases of superficial epithelioma ran such a favorable course, early treatment would not be necessary, but, unfortunately, such a course is a rare exception, and not the rule. I here show you a photograph of a case which, after lasting twenty years as a superficial epithelioma of the pearly variety, has commenced to extend into the deeper parts of the corium, and to encroach upon the eyes, and, if not promptly treated, will finally prove fatal. I also show you photographs of somewhat similar cases, and I have seen not a few where a fatal result followed on account of neglect on the part of the patient, or inefficient measures employed in the treatment.

I once saw a case which commenced as a papule on the lobe of the ear, and was treated by a physician with nitrate of silver, under the belief that it was not a cancer, but some non-malignant growth. The caustic, naturally, did not destroy the whole of the tumor, and within a few months there was secondary infection of the lymph glands of the side of the neck just below the ear, although the primary lesion had changed very slightly. Such a case is not often seen, yet the possibility of its occurrence should always be remembered by physicians. How easily such cases could be cured when seen at an early stage and properly treated.

In another case, a cancer that was not larger than a pea in size and macroscopically very sharply limited, started from the sheath of a hair follicle. Section of this showed great epithelial infiltration down to the subcutaneous tissue, and laterally much beyond its limit, according to the naked-eye appearance. I partly removed the lesion with a cutaneous punch, and then immediately applied a paste of arsenious acid, with satisfactory result.

In still another case the course of the disease was very rapid; the first lesion, commencing as a superficial eczematous-like patch, quickly assumed a malignant form, and proved fatal within a few months. The first lesion appeared upon the left cheek, and in a few months others formed upon the forehead, nose, and right cheek, with rapid destruction of the tissues and early infection of the lymphatic glands in front and below the right ear. An early diagnosis and prompt treatment would probably have cured this patient, but when I saw her operative measures, either by knife or caustic, were useless. I have seen other cases of this very malignant form, the *épithéliome foudroyant* or *épithéliome térébrant* of French writers, and they demand early and prompt treatment. I do not wish to be understood as saying that a cure cannot be obtained in quite a number of cases after the deep corium has been invaded, as I myself have frequently seen and cured such cases, but the earlier they are treated the more favorable is the prognosis. As the majority of all cases of cutaneous epitheliomata belong to the superficial form, proper treatment at an early stage robs the disease of much of its reputed gravity.

The superficial papillomatous form requires for its production a rapid proliferation of epithelium. It is seen principally upon mucous membranes and on the extremities. These tumors are not papillary in structure as is generally supposed, but assume the papillomatous form on account of the rapid epithelial proliferation. In connection with this rapid epithelial proliferation there is a large amount of poison formed, with consequent injury to the connective tissue, and when the barrier—the *pars reticularis corii*—is once broken there is rapid invasion of the corium, with early secondary lymph-gland infection. In an early stage, however, either as a primarily papillomatous growth, or as secondary to a superficial flat epithelioma their removal is not difficult, hence early treatment is strongly called for in this form of cancer. Even when situated upon the lips, if seen early, a suitable treatment by caustics gives most satisfactory results, both as regards cure and shape of lips afterward.

The deep-seated or nodular epitheliomata may occur as a primary growth or from extension downward of a superficial one. Some of these deep-seated nodular epitheliomata, especially when situated upon the scalp, are difficult to diagnose at an early stage, as they resemble somewhat fibroid or sebaceous tumors, and thus valuable time is sometimes lost, as an incomplete operation is performed in the belief that the growth is not a malignant epithelioma. I recall a case operated upon, ten years ago, by an excellent surgeon, thinking it was a so-called sebaceous cyst of the scalp. The growth was upon the vertex. It reappeared a few months later, and when I saw the woman some time afterward the growth was about one and a half inches in diameter and presented the character of an ulcerating epithelioma. The diagnosis of epithelioma had already been made by the physician from sections of the tumor removed by the surgeon. No gland infection could be recognized, and so I removed the growth by a caustic paste. From that time until her death—four years—there never were any signs of a reappearance at the seat of the primary growth, but within six months of my operation a tumor appeared upon the side of the head, followed soon afterward by another behind the ear, and infection of the lymph glands of the side of the neck. Another case, in a little girl only twelve years of age, in whom the growth was in the same location, was operated upon last year for a supposed sebaceous tumor-cyst, and the final result will be a similar one, as the glands of both sides of the neck are now enormously swollen.

The clinical character of these cases of the scalp should be sufficient for accurate diagnosis. The growth first appears as a small nodule, deeply seated, sharply limited, and somewhat movable. It gradually increases in size, feels hard, firm, or elastic; the skin over it appears at first perfectly healthy and non-adherent to the growth; later, it becomes adherent and pinkish or reddish in color, and traversed by dilated vessels. The base is deep-seated, and evidently extends near to the periosteum. Operations for their removal should be early and very complete, destroying part of the periosteum if necessary. In a doubtful case a microscopic examination should be made at the time of operation, so that if pronounced cancer the operation be regulated accordingly.

Pigmented epitheliomata are rare; they pursue a very rapid and fatal course, owing to the active proliferation of the epithelia and power of locomotion, therefore require very early treatment. As they arise from moles or nævi, any signs of nutrition changes in these structures in advanced life, changes causing them to become firmer or to bleed easily, should be indications for the removal of the latter.

Rodent ulcer is a variety of epithelioma in which secondary lymph-gland infection does not occur, but the disease, if untreated, pursues a slow but destructive course, and invariably leads to death from local injury to the region invaded. If treated early a favorable prognosis can sometimes be expected, but in a later stage I think these cases are hopeless. We are not yet in accord as to what justifies the diagnosis of rodent ulcer, and the subject requires new studies. Personally, I do not believe it depends upon the same agent or conditions that exist in the other forms of malignant epithelioma, and that the epithelial proliferation is a secondary process. I have so far always found changes in the peripheral nerves, but whether they are primary or secondary I am not able to state. The fact that the system has sufficient physiologic resistance to prevent lymph-gland infection would show the cause of the epithelial proliferation to be different in the two kinds of epithelioma. As regards the epithelia present, there is no distinct type, either as regards size, staining qualities, or arrangement.

Paget's disease of the nipple should be diagnosed early, and the breast amputated without delay. The diagnosis, however, should be positive and correct, as no woman should undergo unnecessarily an operation of this kind. I have known consulting physicians advise such an operation too hastily. A proper microscopic examination should enable one to confirm or reject the diagnosis of Paget's disease.

In conclusion, permit me to say that I am certain a clear knowledge of the pathologic processes in cancer is essential to the successful treatment of the disease.

THE MEDICO-LEGAL ASPECT OF INSANITY, WITH REFERENCE TO COMMITMENTS, JURY TRIALS, AND EXPERT TESTIMONY.[1]

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WHEN we undertake the study of insanity we find that the definition of the term conveys a widely different meaning to the community, to lawyers, and to physicians. I have often had the question, "What is Insanity?" asked me in court, and have heard it many times propounded to my professional associates. I have answered it to my own satisfaction, and heard it answered with every confidence by others, but each and every time I have heard the definition picked apart in the cross-examination by a cunning lawyer, until only a very slight network remained to sustain it. In referring to the works of medical writers on the subject, I have found nine in which no attempt at a definition is made, while three of the authorities are of the one mind; *e.g.*, that it is impossible to give a definition that will bear legal analysis, although each defines it for practical purposes. Allan McLane Hamilton states that "it is a favorite method with lawyers to make the medical witness commit himself in defining the word, and then hopelessly entangle him in quibbles."

The more I consider the subject the further am I from the opinion that it is possible to frame an answer that would be acceptable to all; that is, what insanity is, when it begins, or where it ends, aside from those cases with a sudden onset, or such that end in death. There is no standard for sanity or insanity. One extremist said that the world was composed of freaks and one sane person; and when asked whom he considered the sane person, answered, "Myself." Boileau said, "All men are insane, but some are able to hide it better than others." Montesquieu said, "Insane asylums were built in order that the outside world would consider itself sane." Haslam, one of the first alienists in England during his time

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[1] Read before the Kings County Medical Association, December 8, 1896.

I am indebted to the writings of Drs. Charles F. Folsom, Allan McLane Hamilton, John C. Shaw, John Sibbald, and Theo. Kirchhoff, and to Redfield's "Law and Practice of Surrogates Courts," for many of the laws, quotations, etc., in this article.

(1832), testified in court that he had never seen a sane man in his whole life, adding, "I presume the Deity is of sound mind, and he alone."

We have, then, to consider insanity according to the different accepted ideas. The community usually considers an insane person to be one with a wild and excited manner, constantly considering the destruction of some person or thing, an individual that must be placed under restraint or closely guarded to keep him from fulfilling his criminal desires; or else they believe the condition to involve the opposite extreme, as expressed in marked dementia with incoherent speech, confused ideas, uncleanly habits, and poor physical condition. This is the popular idea of the class of individuals that should be committed to an asylum for the insane. Then, again, other persons who have overwhelming delusions, strange though mild actions, irritable dispositions, peculiar dress, and such like, are looked upon as cranks, freaks and hobbists, but if asked if they consider a person of this type of sound mind, they answer in the affirmative, and state that his manner is only peculiar and erratic. I have often found that the closer the relation, or the better the acquaintance, the slower are the changed condition of relative or friend observed. This is the chief reason why we have been troubled so much of late by the so-called harmless cranks, who have been doing so much damage to the community by removing so many useful persons from the world. It has often been said that if it was left to the average man to decide as to the mental condition of the inmates of an asylum, he would consider seventy to eighty per cent. of them sane, so well can they hide their delusions.

Lawyers take a much narrower view of insanity than physicians; they consider insanity only so far as it affects the safety of person or the preservation of property. A lawyer considers whether a person is competent to perform certain acts which he may be called upon to perform, or responsible for certain acts which he has committed. Sir James Stephen said, in speaking of insanity: "It means conduct of a certain character—a physician would mean certain disease." Sir Edward Coke said, "A man is insane only when he is *non compos mentis*, or has wholly lost his memory and understanding." A man is not insane, in the sight of the law, unless his act is traceable to, or its nature has been determined by, mental disease affecting his free agency; in other words, unless insanity caused his act either wholly or in great part.

Section 21 of the Penal Code, in reference to irresponsibility, etc., of idiots and lunatics, reads as follows: "A person is not excused from criminal liability as an idiot, imbecile, lunatic, or insane person, except upon proof that, at the time of committing the alleged criminal act, he was laboring under such a defect of reason, as either, first, not to know the nature and quality of the act he was doing; or, second, not to know that the act was wrong." This section has been criticised because it excludes consideration of the question whether the accused possessed sufficient power of self-restraint to forbear the commission of an act which he clearly perceived to be criminal. A desire for self-destruction, and the adoption of means to secure it, do not of themselves indicate a mental impairment which has advanced to the stage of irresponsibility, otherwise the law would not declare the attempt to kill oneself a crime.

In relation to will-making, Redfield states: "The doctrine that any insane delusion incapacitates from making a will has commanded the assent of some high authorities, but the weight of authority and the better opinion accord with the rule settled in this State, by which mental capacity is measured, as in every other legal aspect, by its relation to the act. Hence, a person having any insane delusion relating either to the property, to the persons concerned, or to the provisions of the will, is incapable; while delusions which in no way relate to these do not, as a matter of law, incapacitate, for they involve no more likelihood of actual incapacity than many other latent causes. A person may have an insane belief or delusion as to one or more subjects, and not as to others. The question, in respect to the testamentary capacity, in the abstract, is: "Had the testator, at the time, a sufficiently sound mind to make a will?" but, practically, in most cases the question is: "Had the testator a sufficiently sound mind to make the will in question?" There is but one standard of testamentary capacity known to the law of this State, and that is embraced in the inquiry, "Was the decedent *compos mentis* or *non compos mentis*, as those terms are settled in the law, at the time of the execution of the instrument?" A man's ability to transact his ordinary business with judgment and discretion is very strong, if not conclusive, evidence of testamentary capacity. A monomaniac may make a perfectly valid will, if the delusion which affects the general soundness of his mind has no relation to the subject or object of the will.

Physicians consider insanity from a less limited point of view than lawyers. A medical man applies his mind to its study, so as to ascertain how far he may infer from the evidences of mental action the existence of morbid conditions, with a hope to alleviate or remove them. The cases in which a physician is called upon to define insanity, as the term is used by lawyers, are:

(1) To secure limitation or control of an individ-

ual's actions, usually by guardianship. (2) To control him absolutely in an asylum. (3) To estimate his culpability or criminality, or his capacity to make a will or contract, or to transact business. The definitions for insanity, as given by medical writers on the subject, are somewhat similar. Bucknill says: "It is a disease of the brain (idiopathic or sympathetic) affecting the integrity of the mind, whether marked by intellectual or emotional disorder," and he also recommends the medical witness to add the words, "that the cerebro-mental disorder is such as to suspend or impair the action of the healthy will." Maudsley's definition is as follows: "Insanity is, in fact, disorder of brain, producing disorder of mind; or, to define its nature in greater detail, it is a disorder of the supreme nerve centers of the brain—the special organs of mind,—producing derangement of thought, feeling, and action, together or separately, of such degree or kind as to incapacitate the individual for the relations of life." Dr. Folsom states that any definition of insanity would be incomplete without the statement of Hughlings Jackson's view, that is, that "disease only produces negative mental symptoms answering to dissolution, and all elaborate positive mental symptoms (illusions, hallucinations, delusions, and extravagant conduct) are the outcome of activity of nervous elements untouched by any pathological process. The insane man's illusions, etc., are not caused by disease, but are the outcome of activity of what is left of him (of what the disease has spared), of all there then is of him. His illusions, etc., are his mind."

The simplest division of insanity for all practical purposes is as follows:

Idiocy,
Imbecility,
Mania, } Acute and chronic,
Melancholia, } Acute and chronic,
Dementia (primary and secondary),
General paralysis of the insane.

These have many subdivisions, which are named and classified differently by almost every writer on the subject. Many varieties derive their names from the causation or circumstances with which they appear; they are symptomatic conditions, and are connected with emotional excitement rather than intellectual disturbance. The division I have before described is usually accepted in a court of law without further questioning, and it is better for the medical witness to adopt it than to confuse the court and jury by the subdivisions. This is especially advisable, as a lawyer will often ask a medical witness if he considers such and such a person an authority on the question, and if he answers affirmatively he will be informed that his classification is much different from the one just stated.

Some writers claim that it is impossible to make a distinction between idiocy and imbecility; others differentiate them as follows: "Idiocy is a non-development of the brain; imbecility is an arrest of the development of the brain that takes place after birth, usually due to some of the diseases of childhood, that is, it is a permanent arrest, as the brain is unsusceptible to training, except to a very limited degree." Idiots have been trained so as to assist themselves in many ways; under the guardianship of our institutions many have been taught minor trades. This, of course, is not the case with all, as in a large proportion of cases it is impossible to teach them even the alphabet. The idiot's brain therefore remains in the same condition as that of the new-born child, and no development takes place except in a few cases and under the most persistent training.

The Legal Status of the Idiot.—Though in the United States the idiot is deprived of all his other rights, he is, curiously enough, permitted to vote. He is considered incompetent in the matter of will-making, and obligations of any kind contracted by him are null and void, because of his want of comprehension of the nature of these acts. He is also considered irresponsible criminally when it can be shown that the crime is motiveless and unintentional (in their legal sense), and the existence of the will is disproved. In these cases there is neither realization of punishment or consequences.[1]

The description and definition of other forms of insanity, known under the classification as manias and melancholia, is given in the simplest manner, I believe, by Griesinger, as follows: (1) "The diseases with mental depression are: hypochondriasis, simple melancholia, melancholia with stupor, melancholia with destructive tendencies, and melancholia with persistent excitement of the will or impulse (moral insanity). (2) Those of mental exaltation—mania and monomania. (3) Those of mental weakness—chronic mania, dementia, idiocy, and cretinism."

Probably the most prominent mental disease about which a physician is called into court to testify, as to some person's testamentary capacity, is general paralysis of the insane, which is also known as paresis, paralytic dementia, paretic dementia, progressive paralysis of the insane, softening of the brain, and sclerosis of the brain. In the earliest stages of this disease, when the manner and habits of the patient are changed and he becomes careless and indifferent regarding his personal appearance; when his ideas become expensive and he makes contracts for property or goods that he is unable to pay for, and buys goods that he has no use for, it is then that the medical witness is called to defend him in a court of law for his irresponsible actions. In this same disease a remission takes place in which the patient acts and talks in a rational matter, and it is during this remission that it has been questioned if such a person is capable of making a valid will or contract. I cannot see how a person can have complete reasoning power, even sufficient to consider properly a business contract or compose a will, if his brain has undergone that morbid change that we know takes place in paresis, knowing, as we do, that during the remission or any part of the disease no repair takes place. The length of time of these remissions varies. Baillarger has reported nineteen cases in which the period of remission varied from one month to two years. Dagonet believes that during the remission there is a state of mental feebleness which is incompatible with perfect responsibility.

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[1] Hamilton, "Medical Jurisprudence," p. 126.

In the matter of the commitment of the insane past legislation has made certain radical changes from former statutes. Under the new law, which is known as the "Insanity Law," no person can be committed to an institution for the care and treatment of the insane except upon the order of a judge of a court of record, such order being granted upon a verified petition and a certificate of lunacy signed by two medical examiners, after notice to the alleged insane person or some other person to be designated by the court, unless the court sees good reason to dispense with such notice. A hearing may be had of the judge to whom the application is made, at his discretion, or upon demand of the alleged insane person. A very important requirement of the new law is that no insane person shall be confined in any prison, jail, or lock-up, unless he or she is dangerous and there is no other suitable place for confinement. This does not refer to a person under charge of committing a crime. The examiners must not be connected in any way with the prison, penitentiary, reformatory, or such penal institution where the alleged insane criminal is confined. This new insanity law has many advantages and some disadvantages. The service of a notice upon the patient at least one day before the application is presented to the court, stating that an application is to be made for his commitment to an asylum, is apt to do harm to the patient. It will have a tendency to excite those suffering from mania, and to still further depress melancholiacs. The law allows the court to dispense with such notice, but why should it be served on one and not on all, if it is any protection? I do not know of one patient in my experience as an examiner to whom it would not be more injurious than beneficial. Another section of the law I believe gives a police official too much latitude: "Any person apparently insane, and conducting himself in a manner which in a sane person would be considered disorderly, may be arrested by any peace officer and confined in some safe and comfortable place until the question of his sanity be determined as prescribed by the chapter." It is my impression that this gives a sort of autocratic power to the police, and will cause much unpleasantness.

The rules laid down for the examination of an alleged insane person are as follows: Get a history of the patient's family from a relative or friend if possible, also a description of the actions and manner of the patient from childhood until the present change occurred, so that an idea may be gained as to his normal condition; also, a history of the present attack, with the predisposing and exciting causes. With such information visit your patient with a manner that will gain his confidence from the beginning. Do not give him any impression as to the object of your visit. Converse with him on some subject other than that of his delusions, and while so doing observe carefully his physical condition, his actions, and his personal cleanliness. After you have thus got the confidence of your patient, gradually broach the subject of his delusions, noting carefully the interest he takes in them. It is often necessary to differ with the patient after you have conversed with him on his delusions in order that you may test his disposition. The commitment paper should contain a full account of his irrational ideas and actions so that the court may readily see why the patient is considered of unsound mind and a subject for an asylum. It is possible that the examiner may be called into court at a later date, and a certificate with a good description of the case will refresh the memory very much.

The same method of examination is usually followed in the alleged insanity of criminals, although the examiner begins his examination with a biased mind. There is an object here for feigning insanity, and it is so often practised by persons of this class that it requires more positive evidence to satisfy the examiner than is the case with the ordinary insane. The most difficult examination to make, especially in the case of a criminal, is when conversation must be carried on through the aid of an interpreter, as it is often by the manner in which a question is put and the way it is answered that an idea is gained of a person's delusions and hallucinations. In view of the thorough examination of an alleged insane person, the amount of knowledge and training that is required for such an examination on the part of the medical examiner, and the reviewing of the testimony by the court, it seems strange that when an application is made for the appointment of a committee of person and estate, or when a habeas corpus proceeding for the discharge of such person is instituted, that the court usually directs that such hearings be held before a jury. It is my impression that a jury of laymen is incompetent to judge as to a person's sanity, and I have often thought that such trials should be held before a judge, or before a commission composed of one lawyer and two physicians.

The Medical Witness—Expert Testimony.—The absurd verdicts that have been rendered in so many cases are not alone chargeable to the jury, but are often due to the laws of our State that allow too much latitude to lawyers in the examination of the medical witness. During the cross-examination an effort is made to entangle the witness by some catch question, or to make him contradict himself in some way so that he will appear in a ridiculous light before the jury. Such an examination may have some influence upon a jury, but I believe it is of minor effect as compared with the testimony of a class of men who have testified in our courts frequently of late years under the guise of experts. That these men should appear on the witness stand and have their testimony weighed in the same manner as that of the honest, conscientious, and intelligent members of our profession, seems to me to be an outrage. It is for the medical profession to put a stop to this abuse. So-called expert testimony to-day has been reduced to such a level that many of the reputed experts are only to be classified as criminal rogues. I believe, as a remedy for this evil, that all experts should be selected by the judge presiding at the trial where such testimony is required. At the request of counsel for either side the court shall appoint one or more experts, but not more than three, and their expenses shall be charged as court costs. I would suggest that in every district of the Supreme Court the Governor of the State appoint a commission of five medical men, with power to select such physicians as experts as are considered authorities in their respective branches of medicine, and that its selection should receive the unanimous approval of the judges of the Appellate Court of the same division. This would separate the direct witness in a case from the medical expert, and we would then listen to expert testimony with an eager ear, knowing that the witness was an authority on the subject at issue, was testifying to the truth, and was bringing to bear the information of a trained mind.

DISCUSSION.

Hon. Willard Bartlett, Judge of the Supreme Court, Kings County: Let me speak first of what Dr. O'Connell has said in regard to medical expert witnesses. To a lawyer, a chemist, who is called upon to give evidence in a murder trial as an expert, is not what would ordinarily be termed an expert witness, unless he is called upon to state not merely facts observed by him as a chemist or physician, but to testify to matters of opinion; and it is to this class of witnesses rather than those who simply detail facts that lawyers generally refer as expert witnesses. The proposal is made here, and I have heard it made many times before, and have discussed it myself in a paper I read some years ago before the Society of Medical Jurisprudence in New York, that there should be appointed by the court, or in some official manner, an expert to give testimony in important cases, so that, for example, when a question as to insanity comes up before a judge and jury, after all the testimony as to matters of fact has been given on one side and the other, this expert may be called upon to give his opinion in answer to a hypothetical question, or otherwise, as the court deems best adapted to illustrate the truth. As to this, I wish to make one suggestion to the medical profession. A patient who has been treated by his physician for months and years is alleged to be insane, and the question of his insanity is being tried. The physician is prepared to show, so far as his testimony goes, that the man is perfectly sane. He can go amongst the medical profession and find a score of physicians of the highest character who are all ready to endorse his opinion, and to take the stand and give evidence to that effect. He goes into court and testifies, and the other gentlemen take the stand and testify, all being equally unknown to the judge and jury; and perhaps, after giving this testimony, somebody appointed by some authority, political or judicial, some physician, whose ability may be questionable, takes the stand and gives evidence with all the weight of his official position in a contrary direction. Would that be fair or desirable? Is the suggestion that is so often made that we should have a class of official witnesses a solution of the problem? The problem is a serious one and is not easy of solution, and I am afraid that this would be very far from a satisfactory solution. One point more. The idea of official witnesses is totally opposed to all prevailing ideas of American and English jurisprudence. It would be a departure in a direction contrary to the spirit that has given rise to our free institutions. It may be an improvement, but it is radically different; and we should consider that before we determine as to what is a true solution of this problem. That is all I wish to say on the subject of expert testimony.

What I have to say as to the rest will be devoted to the relations of the law to insanity. Dr. Bierwirth, in inviting me to come here this evening, said he particularly wanted to have my views on this subject and upon the recent legislation which went into effect in July last in regard to the commitment of the insane. Now, our law dealing with the insane substantially treats the subject in four aspects: (1) Mental derangement, so far as it justifies the restraint of personal liberty. (2) Mental derangement, so far as it relates to the property of the patient and taking away from him the control of that property. (3) Insanity, as affecting the capacity of the patient to execute wills and contracts generally. (4) Mental derangement, as an excuse for acts which would otherwise be criminal.

As to mental derangement, which justifies the restraint of the individual, or the commitment of the insane, I think there would be a better understanding between doctors and lawyers if the precise objects of the law were understood. If a man is taken ill in his own house with any sort of malady, the law does not ordinarily undertake to interfere with the physician in his treatment of that patient. He does substantially what he likes. And if the man is harmlessly insane in his own home, the law does not undertake to say what should be done or not done, except to see that the physician treating him shall possess and exercise ordinary skill in his profession. The chief reason why the law interferes at all in regard to lunatics is because of the acknowledged necessity that some sort of physical restraint must often be exercised; and all that the law has attempted to do is to see to it that in those cases where physicians find it necessary and proper to exercise this physical restraint upon the liberty of the citizen, such restraint shall be exercised only under circumstances clearly justifiable. When the law does that, it does enough; when it does more than that, it does too much.

Under the old system the process of placing the insane patient under restraint was very simple. An examination had to be made of the patient by two physicians who had practised medicine for three years and were of good character, their qualifications in this respect being certified to by some judge of a court of record. Without any prior judicial approval whatever the patient could be sent to an insane asylum for a few days until judicial sanction was secured. Under this law I have had much personal experience. There were few evils, and certainly no necessary evils, provided the physicians did their part of the work in the right manner and the judges did their part; and if the physicians were properly qualified and had made the examination with the necessary care, and the judges had examined the cases, and had seen at least one of the physicians who had signed the certificate, the system worked very well. Of course, there were evils if either the physicians or the judges were lax. For example, it is a mere mockery for a man who is not a physician to come into a court with fifty certificates of lunacy, and expect the judge to sign his name to every one of them without any inquiry whatever. I repeat, such procedure is a mere mockery, and affords no protection whatever to the persons whose liberty is about to be restrained; but a proper degree of care would prevent any such evils as this.

The law now is changed very much. Dr. O'Connell has referred to some particulars in which it has been changed. There can be no exercise of such restraint without a prior judicial order or adjudication that the patient is insane. It is objectionable, it seems to me, to require such a positive judgment to this effect in all cases, as a condition precedent to the temporary confinement of the insane. There are many cases in which the mental derangement is not permanent and in which the patient, if he or his relatives could have anything to say about it, would prefer that there should not be on record in the courts so formal a finding of insanity as is now required. Under the old system a certificate from two physicians, that they deemed him insane, was necessary, but there was no formal adjudication of insanity. This is absolutely indispensable now. There is another class of cases where it is important to proceed with rapidity. These may be defined as emergency cases, in which it is better for the patient himself and for his family that he be placed under restraint; and the expediency of restoring the old law to the extent of providing for at least temporary restraint in such cases, without adjudication, seems to me quite manifest.

I will pass on as rapidly as possible to two or three other points which I have in mind. It must be remembered that all these proceedings with respect to the commitment of the insane upon such certificates and upon such judicial orders as I have alluded to, have no direct effect whatever upon the patient's civil rights, or his right to vote or control his property. The only effect of all these proceedings is to justify his restraint. If you wish to take even one dollar from him for his own benefit the proceedings must be entirely different. Our jurisprudence on this subject is derived from England, and as in England, the assistance of a jury is necessary. A third aspect of insanity with which the law deals is that relating to the capacity of the patient to make wills and contracts; and as my friend, the Surrogate, is present, and is, I understand, to favor us with a few remarks, I will not dwell any longer on this phase of the subject.

As to insanity and mental derangement as an excuse for what would otherwise be regarded as criminal acts, perhaps there has been no subject on which the medical and legal professions are more hopelessly divided than upon this. The law has been criticised again and again for the inadequate and unsatisfactory character of the legal rules as to what degree of mental derangement shall be deemed sufficient to constitute an excuse for crime. About this I only wish to make one observation. The difficulties are far more exaggerated in discussion than they really are in practice. I have rarely seen any criminal case in which, after the conclusion was finally arrived at by judge and jury, the results would not meet the approval of a body of medical men like the Kings County Medical Association, if carefully reviewed. We do better than you suppose would be possible from the law as you understand it. Theoretically it is not perfect; but in practice it works, on the whole, very well, when the difficulties in the way of devising a better system or a better definition are considered.

I should be very glad to cooperate with any movement coming from the medical profession toward making the law theoretically more perfect; but taking into consideration all the difficulties of the matter I think we have every reason to be satisfied with the results as they are achieved in the courts to-day.

HON. GEO. B. ABBOTT, Surrogate of Kings County: The objections usually urged against a will offered for probate are three: First, that it has not been executed in accordance with the requirements of the statute; second, that the testator did not possess testamentary capacity at the time of execution; third, that the will was procured by fraud and under influence. Of these, the second objection, that of testamentary incapacity, is the one most often litigated, and many times very perplexing and difficult problems arise, as I have found in my experience as surrogate. The question for the court to decide in regard to testamentary capacity is, "Did the testator comprehend the nature and extent of his property, and who have just or natural claims upon his bounty in its disposition?" Many people are superstitious in regard to making their wills. Instead of making them in the prime of life, or when at their best mentally and physically, they put it off for one reason or another until at the point of death. The questions the court have to consider are: "Under what circumstances was the will executed? Did the testator possess sufficient testamentary capacity to know what he was doing?" and, "Was it executed of his own free will?"

Some lawyers have peculiar ideas about testamentary capacity. A lawyer some time ago came into my court, alleging that a certain will had been made while the testator was insane. I saw nothing in the case indicating mental trouble on the part of the testator; but the lawyer declared that there was no doubt as to his absolute insanity. His first witness was a barber, who stated that the testator went to his shop to be shaved, and as soon as he sat down in the chair he went to sleep, and therefore he was insane and incapacitated for making a will. Under these circumstances, I am afraid I should not be competent to make a will myself, as I usually go to sleep in my barber's chair.

The Hamilton will case was tried before me. It was one of the most difficult and perplexing cases that I have ever had to deal with; one of the "border-line" cases so difficult to dispose of satisfactorily. In relation to expert testimony, it affords ample illustration of how unsatisfactory this class of testimony often is. The testator executed his will on the twenty-seventh day of October. It was drawn up by a lawyer, who also witnessed the will. The other witness was of good reputation, but not a professional man. The testator's family physician had seen him on this same day. About ten days later he had an acute seizure, and became violently insane. Then experts were called in who saw him under these conditions, but who had not seen him previous to that time. The testimony of the lawyer who drew up the will and subscribed to it as a witness, and that of the family physician, was so clear and explicit as to the capacity of the man on the day on which the will was executed, that I made up my mind to admit the will to probate. The expert witnesses were numerous, Dr. O'Connell, whose paper you have just heard read, being one of them. A hypothetical question, difficult, intricate, and of great length, was propounded, and the medical men called by the contestants answered it with great unanimity, agreeing that the testator was of unsound mind. The experts called in by the other side were required to answer a hypothetical question of almost a similar nature, and they were quite sure that the testator was perfectly sane. Under these circumstances, you can see how unsatisfactory such testimony is. I concluded to be guided by the testimony of the lawyer who drew the will and the family physician, and admitted it to probate. A jury subsequently reached a different conclusion. We have many cases of this kind in the courts, and you can readily see that when the opinions of eminent experts, on the same statement of facts, are so conflicting, their testimony is not of much service to the court in reaching a decision.

It may be possible to formulate some system which will make the introduction of expert evidence more satisfactory to medical men and the courts; but, as Judge Bartlett has just remarked, it is a question which is very difficult of solution, and after much consultation with other judicial officers on the subject, I am not sure but our present system is the only practicable one, after all.

DR. J. C. SHAW: As Judge Bartlett has placed the matter so clearly before the meeting there is little for me to say. The most objectionable feature in the law of commitment is the service of the paper on the patient twenty-four hours before committing him to an asylum. Two or three weeks ago I was compelled to appear before the judge of one of our courts in the case of a man who was suffering from paresis in the early stage and request that he permit the service to be made on the man's wife. It certainly would make such a patient worse to present this paper to him stating that he was to be adjudged a lunatic.

Lawyers have been in the habit of coming to me from time to time during the past ten years on this subject of expert testimony, and in the majority of cases I have been disgusted at the nature of the testimony presented. Such testimony is usually positively ridiculous, particularly so in the testimony in connection with the matter of contested wills. I do not know of any class of testimony that is more foolish than in cases of this kind. All sorts of subjects are brought up which have no bearing on the matter at all; and if such a suggestion is made to a lawyer he is offended. He thinks that all such statements should be accepted without objection. Judge Abbott has called attention to one such case. Some years ago I was engaged in a case of contested will where a barber testified that he thought the testator insane because on one occasion he had forgotten his rubber overshoes in the barber shop.

In regard to expert testimony, I have long been convinced that this is objectionable in many ways. As a rule, the lawyer who calls the physician endeavors to make him a partisan to his own side rather than an expert witness. When the physician is on the stand and is cross-examined he often displays the partisan spirit in his answers. This is wrong; he should be entirely impartial in his testimony, no matter if in the cross-examination his answers would appear to be against the side that calls him.

DR. A. C. BRUSH: There is one aspect in criminal cases that has never been sufficiently brought out. I refer to the circumstances under which the expert sees the criminal. He sees him after the commitment of the crime, when the victim of paranoia, feeling that his enemy is "removed," has quieted down, and is more rational; or, again, the fear of impending punishment is sufficient to recall him to a more rational state only to lose his reasonable manner after the stimulation is removed; or, again, while imprisoned he may be animated by a feeling that he is safe from his enemies, and is quieter under these circumstances; or his counsel may have visited him in order to make up his case, and this counsel, who knows more on the subject of insanity than is commonly believed, coaches him in regard to it.

In regard to expert testimony, when an expert is put upon the stand he is often called upon to answer questions about mythical personages or characters from the Bible until he is thoroughly tired out, and then is required to answer an intricate hypothetical question. Under these circumstances he sometimes answers quite differently from what he would do if he were more cool and collected.

THE DIAGNOSIS AND TREATMENT OF ACUTE INTESTINAL OBSTRUCTION.[1]

BY J. A. GOGGANS, M.D.,
OF ALEXANDER CITY, ALA.

I BELIEVE that it is now generally conceded that more rapid strides have been made in abdominal surgery during the past few years than in any other department of our art. Still, we have not arrived at perfection in operative technic, nor have we exhausted the field so completely in point of variety of pathologic conditions that we can say that the abdominal surgeon does not still meet with cases that are more or less unique. In order that the science and art of surgery may be of the greatest utility to humanity, the surgeon should report all of his important unusual cases, especially if the results have been unsuccessful. The following case will illustrate very forcibly the importance of making a correct diagnosis and instituting proper treatment in all cases of obstruction of the intestines.

Mr. C., aged sixty-five years, married; duration of sickness, seven days. I saw him on the fifth day in consultation with Dr. Harlan. Pulse, 100; temperature, 101° F.; recurring attacks of pain in the abdomen, followed by vomiting. He had taken several one-half grain doses of calomel, and enemas of warm water had been given, but the bowels had not moved. The abdomen was not much distended, and the vomited matter consisted mostly of water. There was not the least tenderness in either inguinal region.

A diagnosis of acute intestinal obstruction was made and immediate laparotomy advised, but the patient asked that the operation be postponed for twenty-four hours, to await developments. At the end of this time the patient's condition was much worse. The pulse was then 120 per minute, the temperature 102° F., and there was more pain and vomiting. Laparotomy was performed under ether, a median incision four inches in length being made. A loop of much distended intestine protruded, and this was first punctured with an aspirating needle, and then was followed in the direction of increasing congestion until the seat of obstruction was found at the internal abdominal ring. Considerable force was necessary to dislodge the gut, and it sustained a laceration half an inch in length at the point at which it was adherent. This was closed by a few Lembert sutures. The abdomen was then closed with silkworm-gut sutures. The time occupied in performing the operation was twenty minutes. The patient rallied a little, but died six hours later.

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[1] Read before the Jefferson County Medical Society.

As will be seen, this was no triumph of surgery. I report it, however, on its merits, believing that much may be learned from it. It serves, at least, to illustrate the symptoms of acute intestinal obstruction, as well as the extreme danger of delay in performing laparotomy after the diagnosis is evident. An experienced surgeon should be able to make a diagnosis within a few hours. The patient is suddenly seized with pain in the abdomen, which is paroxysmal in character, and is soon followed by vomiting. He soon becomes prostrated from shock, and knows that he is seriously ill; constipation is obstinate. In fact, the symptoms of intestinal obstruction are simply those of strangulated hernia.

When called to a patient presenting these symptoms we should first see whether there is a hernia; we should also exclude cancer of the rectum and impacted feces before coming to the conclusion that the obstruction may be due to bands, intussusception, volvulus, or, perhaps, to distension from gas or fluids. After making the diagnosis, the location of the obstruction should be found, if possible, and I am firmly of the opinion that this can be done with much more certainty than was formerly supposed.

The gynecologist of to-day, as well as the general surgeon, should be especially interested in this subject, for it is stated on good authority that perhaps one-half of the deaths following laparotomies are due to acute intestinal obstruction. We must look at these cases from this standpoint. The death rate from laparotomy for intestinal obstruction is, perhaps, seventy-five per cent, and without the operation, about one hundred per cent. Therefore, the operation is still justifiable. But why such a high rate of mortality after laparotomy for this condition, when the death rate from other abdominal operations is so astonishingly low? There can be only one answer, and that is *delay in operating*. It demands abdominal section for its relief just as soon as the diagnosis becomes manifest, and before the bowels become inflamed and distended. The surgeon, however, is generally called in late, and I am impressed with the belief that if many such patients were operated upon only under local anesthesia, and perhaps only an artificial anus made, the death rate would be diminished. The cause of the obstruction may be removed subsequently.

Nearly every physician or surgeon is competent to open the abdomen, but the exact mode of finding and relieving the point of obstruction is an undertaking much more difficult to accomplish. I would recommend the following plan as the one fraught with the least expenditure of time and danger to the patient: In the first place, it is reasonable to suppose that the coils of intestine which are most distended and congested will be the first to present at the incision after the peritoneum is cut through. The most congested coil should be followed in the direction of its increasing congestion, and the seat of obstruction will usually soon be found. If this method fails to locate the obstruction, the hand may be introduced to explore for it. To pass the intestine through the fingers takes much time at the expense of shock to the patient. I would warn against allowing a patient to leave the operating table with a greatly-distended abdomen. If this is done, the operation is incomplete and shock will surely follow. In fact, the cause of obstruction may be the great distension; consequently, I would, in all cases of laparotomy for intestinal obstruction, when there is much distension from gas or fluids, incise the intestine transversely and allow the contents to flow away as rapidly as possible, and then close the incision with a double continuous suture.

CLINICAL LECTURE.

THE TREATMENT OF ENDOMETRITIS; ABDOMINAL HYSTEROPEXY.[1]

BY CHARLES GREENE CUMSTON, M.D.,
OF BOSTON;
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THE first case that I wish to show you this morning is that of a young woman, single, of some thirty years of age, whom I curetted four days ago for an endometritis of some two-years' standing. The history of this patient is briefly, as follows: Three years ago she had a criminal operation performed on her for pregnancy of about two-months' duration. According to her statement, she had no unfortunate complications following this operation, although ever since that time she had noticed a yellowish mucous discharge from the vagina. She had always menstruated regularly, although she is now apt to be a few days late. The menses are rather abundant, and, since the criminal operation, have given her a certain amount of pain, so much so, that she has been obliged to give up her work, which was that of a servant.

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[1] A clinical lecture delivered at the Deaconess Hospital.

The patient was found to be highly hysterical, and, as no satisfactory examination could be made without narcosis, ether was given, and the following condition found: The uterus was enlarged in physiologic anteversion. There is a very small laceration of the cervix, but not sufficient to justify an operation for its correction. On the left side the ovary was slightly enlarged, still it did not appear to me of sufficient importance to justify an exploratory incision in the posterior cul-de-sac or its removal. Consequently I only scraped the cavity of the uterus and shall wait and see what result this operation may have upon the patient. The curettement for the endometritis, which in this case was distinctly due to infection of the uterus at the time the criminal operation was performed, will probably do away with all the symptoms of which the patient complained, namely, pain and copious menstruation.

While there is nothing particularly interesting or remarkable in this case, I wished to show it to you and to consider the treatment of chronic endometritis, because it is one of the most unsatisfactory diseases of the uterus to treat, for, if not properly carried out, and if the after-treatment is not perfectly precise and closely looked after, the result of your operation will be absolutely *nil*, and after a short time your patients will be just as badly off as they were before you undertook to treat them. In the first place, to perform a curettement properly, it is absolutely necessary to perform the operation correctly, and, before passing to the next patient, I wish to say a few words regarding the operation and the after-treatment of the patient. The operation is condemned by many, but it also has its upholders. It is evident that a short time ago it was performed for almost every symptom that a woman could present in her genital organs, and was certainly very much abused, but now the indications appear established, and we know much better when to resort to it.

In endometritis the mucosa of the uterus is the seat of disease at the beginning, and, if it is allowed to continue for any length of time, the lesions will little by little penetrate into the body of the uterus, that is to say, into the middle of the walls, and it is precisely this infiltration that will render not only the diagnosis somewhat difficult, as in long standing cases it might be taken for epithelioma, but the result of the operation is not so good. Curettement, as you know, consists primarily in removing the fungoid endometrium, but this is simply a part of the treatment of endometritis, and, if you only curette the uterus, the results will be poor. As in the treatment of infected cavities, disinfection is what you aim at, and this is the end attained by curettement. In order to be able to disinfect the uterus, the organ must be first dilated and afterward cleansed by a solution of chlorid of zinc, or, what I consider better, equal parts of glycerin and creosote. In performing curettement you must employ complete narcosis, because you must obtain an absolute relaxation of the patient in order to do it properly. I always place the patient in the dorsal position, with the legs held back on the abdomen by an assistant standing on each side. The next thing to do is to thoroughly disinfect the vagina with nail brush and green soap, but one point on which I would insist is that you must be careful not to brush too hard, or otherwise you will produce abrasions in the vagina, and this may give you trouble in the after-treatment. After the vagina has been thoroughly brushed, a douche should be given, either of sublimate, 1 in 4000, or of a one-per-cent. solution of lysol or creolin. It is needless for me to say that any operation on the genital organs of the female requires that the parts should be shaved thoroughly before the operation, because the hair on the pubis and vulva makes excellent culture grounds for infectious organisms. You next introduce a speculum, or, what is still better, a simple posterior vaginal retractor, which will bring the cervix quite sufficiently into view, and then grasp the latter with a pair of stout tenaculum forceps. When you do this be sure to include a considerable amount of tissue between the teeth of the instrument, in order that it may not slip and tear the cervix. Personally, I usually catch the anterior lip of the cervix, although many operators think it better to catch the posterior one. If there are no periuterine lesions, you may draw the cervix down to the vulva, but if any inflammatory condition is present above, you simply steady the cervix by your forceps, and by simple retraction of the posterior vaginal wall you will be able to see sufficiently well to curette with the uterus in place. After the forceps have been applied to the cervix you proceed to dilate. There is considerable importance in selecting the proper instrument for this. When there is a narrow cervical canal, it is better to begin by passing a few Hegar's sounds, in order to render the canal patent and sufficiently large to allow of the introduction of the blades of a metallic dilator. If, on the contrary, the canal is sufficiently open, the dilatation with Hegar's sounds will not be necessary.

You will see Goodell's dilator used, or some modification of it, in almost all of the hospitals. Personally, I consider it far too powerful to use, and I know of no better instrument than the old three-bladed dilator described and employed by Scanzoni many years ago, which I find answers every purpose. When closed the blades of this instrument are not very much greater in circumference than an ordinary uterine sound, and it can be introduced with great ease into the canal, and by a little pressure the three blades separate, and dilatation is very easily accomplished without lacerating the tissues of the cervix. When the canal has been dilated sufficiently to introduce the curette, you should proceed by scraping first the anterior wall of the uterus, then the posterior wall, and then the sides, and you should finish by removing all diseased tissue around the orifices of the tubes. All this should be done methodically, or else you will leave a large amount of diseased mucosa in the uterus, which will simply be the starting point of a new endometritis. I have also a word to say regarding the curette. Nearly every operator has invented a curette, which he considers superior to any other, but in my opinion no instrument of the kind has been devised that is superior or as good as that of Recamier. This is long and narrow, and for this reason is easily directed into the corners of the uterus, and can reach and remove all of the diseased mucosa.

The after-treatment of curettement for endometritis is of great importance. The uterus having been thoroughly irrigated with lysol solution, and having been carefully swabbed out with a tampon wet in glycerin and creosote, equal parts, the dressing is proceeded with. In order to drain the cavity the first thing necessary is to keep the orifice dilated and not allow it to close up. For this purpose iodoform gauze is largely used, the uterus being completely packed by some operators, while others simply drain it by introducing a few strips. I have used gauze drainage in some twenty cases, and I am free to confess that nearly all of them did poorly. The gauze appeared to block up the uterine orifice, and the secretions stagnated in the cavity. Of this I am sure, because two or three of the patients had an elevation of temperature a day or two after the operation, and when the gauze was removed and intra-uterine douches were given, a large amount of bloody liquid was washed away. In another series of cases I did not make use of drainage, but simply kept the vagina aseptic, dispensing with other dressing, but it appears to me in every way more surgical to drain and to drain *surgically*. For this reason, as well as to keep up a good dilatation, I insert two small rubber drains, which have previously been sterilized by boiling in a 1-in-1000-corrosive-sublimate solution, and carry them up to the fundus of the uterus and allow them to protrude from the external orifice of the cervix for about six centimeters. I then pack the posterior cul-de-sac of the vagina with iodoform gauze, then the anterior cul-de-sac, and finally the entire vagina, leaving the two drains protruding about two centimeters from the vulva. I thus obtain direct drainage from the uterine cavity. Over the drains are placed several sterile gauze pads, which are changed, as in any other case of surgical drainage, as soon as they are soiled. The patient's urine is drawn every eight hours during the time that the drains are left in place, and she is allowed to sit up in bed on the day following the operation. By allowing your patients to sit up, you will produce an excellent inclined plane, which will allow all contained secretion to immediately run off, and as the drainage tubes are sufficiently large, the drainage of the uterus, I believe, is complete. Every day ten cubic centimeters of peroxid of hydrogen is injected through one tube into the uterine cavity, and this keeps the tubes as well as the uterus clean. According to the case, I leave the packing and drainage tubes in place for eight or ten days. I then remove them, thoroughly irrigate the vagina in the morning for three or four days, and usually the patient will be perfectly well after that.

If one is dealing with a chronic or septic endometritis, I think it well to leave the drainage tubes in place for at least fifteen or twenty days, and, if an intelligent nurse who understands the principles of surgical asepsis has charge of the case, and she is given necessary directions, infection of the uterus from without need never be feared, and your patients will be benefited by the operation.

You see in this case that the drainage tubes are protruding about three centimeters beyond the vulva, and it is now four days since the operation and all discharge from the uterus has ceased. I shall remove the tubes at the end of a week, and I think the patient will go home completely cured of her malady after the expiration of ten or twelve days.

The patient that I now show you is a woman, sixty years of age, upon whom I performed abdominal hysteropexy just seventeen days ago, and as the case has presented some interesting features, and as the indications for performing this operation are very often misunderstood, I desire to speak at some length regarding it. In the first place, you will see by the chart that the temperature went up to nearly 38.5° C. on the evening of the operation; that on the next day it was about 38° C., and that on the second day it rose again to nearly 38.5° C. The elevation of temperature after abdominal operations, when occurring on the succeeding two days, is usually not of much importance. The most important point to consider is the pulse. In the case of this patient, the pulse was 130 on the night of the operation, and the next day it still ranged at about 115 beats a minute. This pulse rate occasioned me some alarm, because it is a far too frequent beat, and would indicate infection of the peritoneal cavity. After the second day, however, it dropped to about ninety, and remained there, and the patient, as I have told you, made an uneventful recovery. Rise in temperature and a very rapid pulse rate is exceptional in uncomplicated cases, but in the present instance this unusual occurrence can be explained, I think, by the fact that for several days previous to the operation the patient had a morning diarrhea, there being as many as six or seven liquid movements during the forenoon; and then when the abdomen was open, the bowels, which were in a subacute inflamed condition, were irritated by the manipulation necessary to suture the uterus to the abdominal walls, and this provoked a slight irregularity in the temperature and pulse.

Regarding operations in general on elderly people, I would say that unless the patient is in excellent condition one should always be prepared to meet any indications of shock that may occur. A hypodermic syringe containing one-fiftieth of a grain of strychnin, in solution, should be at hand to counteract symptoms of collapse, and, what is most important of all, preparations should be complete for the administration of artificial serum, either directly into a vein or subcutaneously. I will give you a few formulæ for the preparation of this serum. The solution recommended by Hayem is probably the best for injections of large quantities, for the reason that its composition is very similar to that of the blood serum. It is as follows: Chlorid of sodium, five grams; sulphate of sodium, ten grams; boiled water, one liter. Another very excellent solution, recommended by Chaleix-Vivie and Audebert, which they say will give very encouraging immediate results, is chlorid of sodium, seven grams; glycerophosphate of sodium, four grams, and sterilized water, one liter. Chéron prefers a more concentrated serum, made by combining pure carbolic acid, two grams; chlorid of sodium, four grams; phosphate of sodium, six grams, and sulphate of sodium, eight grams, with boiled water, 100 grams. This condensed solution, in which the phosphate of sodium has been introduced on account of its action on the nervous system, may be injected in doses of fifteen to thirty grams, and may be repeated several times a day and continued for several days. In acute anemia following hemorrhage, it is highly recommended. The important thing to remember is that the solution must be absolutely sterile. It should be boiled, a small amount of chlorid of sodium being added, on account of the concentration which results from the evaporation of the water during boiling.

I will explain to you in a few words why I performed abdominal hysteropexy upon this patient. She came to the dispensary early in the spring of 1896 with a prolapse of the uterus, although this was not very marked, the cervix hardly appearing at the vulva. I did not wish to subject her to a very severe operation. I thought that a plastic operation on the anterior vaginal wall, with a perineal operation, would be sufficient, and this was performed, with the result that she was up and about at the end of three weeks feeling perfectly well. The condition remained excellent until the middle of last summer, when she was out walking and caught her dress on some obstacle and fell on her back. This produced considerable strain, and a few weeks later she noticed that the uterus, which up that time had not given her trouble, had begun to fall again. I saw her again in October and found that the uterus and vaginal walls were again prolapsed, although not to any such degree as before the operation, and, as I was afraid that little by little the uterus might return to its former position, I advised her to have the abdominal operation performed, to which she agreed.

Abdominal hysteropexy is a very good operation under certain conditions, and, in my opinion, under these conditions only. In the first place, the patient must have passed the child-bearing period, because in many cases in which the operation has been performed on young women who have afterward conceived, the pregnancy has been interrupted at the third or fourth months; or when it is gone to term in many cases the labor has been rendered difficult on account of the adhesions existing between the uterus and abdominal wall, and it has been necessary in quite a number of instances to resort to some of the major obstetrical operations in order to deliver the child. This is a sufficient reason why the operation should be rejected in the case of all women who can still have children. Another contraindication is when the uterus and adnexa are bound down by adhesions resulting from inflammation. Under these circumstances the operation would be rendered extremely difficult and probably impossible and might be the means of setting up anew all the former inflammatory troubles. I would also say that when abdominal hysteropexy is not combined with a plastic operation on the vaginal wall, in all probability it will be a complete failure. When this combination is carried out I consider it the very best operation in use for prolapse of the uterus in elderly women, and I know of nothing to take its place. Regarding vaginal hysterectomy for prolapsus, I think that it is an imperfect operation for the relief of the condition, and is only indicated when the prolapsed uterus contains a fibroid tumor, and then it is performed, not for the prolapsus, but for the neoplasm. There is one indication for vaginal hysterectomy for prolapsus, and that is when the organ has become strangulated and reduction is impossible. In this case, in order to avoid gangrene of the genital organs from the cutting off of the vascular supply by strangulation, vaginal hysterectomy is absolutely indicated, and is probably the only operation that will save the patient.

The after-care of patients who have undergone abdominal fixation of the uterus consists principally in keeping them quietly in bed for at least three weeks. The sutures may be removed at the end of eight or ten days, and if all goes well the patient may be allowed to sit up at the end of twenty-one days. Although the abdominal incision for this operation need only be six or seven centimeters in length, the possible occurrence of hernia should always be considered, and the abdominal walls supported by a binder for a year or eighteen months.

An interesting feature of this case was the extreme amount of gas in the bowels, which gave the patient a great deal of pain. To overcome this she received an enema of soap suds and an ounce of turpentine every time she was distressed, and this brought away the gas and afforded relief, although during the first four or five days after the operation she received as many as five or six enemas in the twenty-four hours. Another excellent treatment for the relief of gas in the intestines following abdominal operations is the introduction of a large tube some eight or ten inches into the lower bowel.

The feeding of patients after abdominal hysteropexy is practically the same as after any abdominal operation. The diet should consist chiefly of milk, to which may be added some lime water and gruel. Champagne is very efficacious in relieving the nausea. I can also very highly recommend the compound tincture of cardamon, ten drops of which may be given on a lump of sugar every two hours. The bowels should be moved by a saline forty-eight hours after the operation, or even earlier if there is any particular indication for it.

MEDICAL PROGRESS.

Etiology of Cancer.—RONCALI (*Centralbl. für Chirurgie*, No. 50), in a paper read before the Eleventh Congress of the Italian Surgical Society, held in Rome, October 26–29, 1896, thus sums up the present knowledge of the etiology of cancer:

1. In the cell protoplasm and connective tissue of malignant new growths are found bodies which are not of cellular origin, but come from the outside world.
2. These bodies are morphologically similar to the so-called coccidia which different investigators have found in the cells of epitheliomata and sarcomata.
3. These bodies which are found in cancer are morphologically identical with blastomycetes which are found in animals after they have been inoculated with pure cultures of organized ferments.
4. They resist acids and alkalies exactly as do the inoculated blastomycetes.

5. They occur only in malignant growths.

6. In new growths in men they are found in certain places, as in the periphery, where growth is still active, and not in the middle where the elements are already degenerated. They are situated either in the protoplasm of the cells or between the fibers—only exceptionally in the nuclei.

7. They stain in the usual way, and can often be obtained from malignant tumors of men and animals and grown in a pure culture.

8. Such pure cultures are always composed of blastomycetes, and when inoculated they press into the cells and between the fibers, producing the same appearances as in the tumors of men and animals from which they were isolated. These bodies show the reaction of cellulose exactly as do the blastomycetes which have been injected into the tissue of an animal. This is a proof that they do not arise from the degeneration of the cells of the cancer.

9. Certain blastomycetes produce in the animals experimented upon changes of a neoplastic, not inflammatory, character.

In spite of these results Roncali did not consider that the etiology of cancer was definitely determined. First, it would be necessary to inoculate with blastomycetes obtained from a malignant tumor of a certain species of animal another animal of the same species; and to obtain in the animal inoculated the same malignant new growth, as existed in the other animal.

The same subject was discussed by Maffucci and Sirleo who had examined twenty-four malignant tumors (carcinoma and sarcoma) and obtained from them various sorts of blastomycetes which they had injected into animals. They formed conclusions in the main similar to those given by Roncali. They found blastomycetes especially in ulcerated malignant tumors and strongly suspected that they should be looked upon as the result of a secondary infection. In general, they did not oppose the opinion that cancer and sarcoma might be caused by blastomycetes, but as yet this has not been demonstrated by experiments.

A Rare Case of "Hemorrhoids" of the Prostate.—Krauss details in the *Wien. klin. Wochen.*, No. 28, 1896, an unusual case. The urine of the patient, a man fifty-eight years of age, contained an appreciable quantity of blood. A blood clot was always voided before the beginning of urination, especially when the bladder was distended with a large amount of urine. A normal stream usually followed the escape of the blood clot, or a quantity of blood-stained urine was voided followed by an intermission, after which blood clots were passed, followed again by a normal stream of blood-stained urine. The prostate gland was undersized, and cystoscopic examination of the bladder gave only negative results—cystotomy was performed and revealed a continuous flow of blood from the anterior part of the neck of the bladder toward the posterior wall of the bladder. In the neighborhood of the neck of the bladder distended veins and even varix were visible. On digital examination the mucous membrane of the neck of the bladder was found to be normal and smooth, so that the hemorrhage must have come from the portion anterior to the internal vesical sphincter, or, in other words, from the region of the prostate. The Paquelin cautery was applied to the part adjacent to the internal orifice of the urethra. After complete cauterization the hemorrhage from the prostate ceased and complete recovery ensued.

A Point in the Early Diagnosis of Coxalgia.—Alexandroff (*Revue de Therapeutique*, January 15, 1897), in the early diagnosis of hip disease, lays especial weight upon the two signs of atrophy of the muscles and hypertrophy of the subcutaneous adipose layer. He attributes to this latter symptom a great value, for it may exist when all other symptoms are wanting, and in its absence the diagnosis of coxalgia can be rejected. It can be determined by lifting folds of the skin and subcutaneous tissue upon the thigh and buttock, as well as upon the leg and foot. It will be found that on the affected side the fold is from one to four m.m. thicker than on the well side. A special apparatus, called the adipometer, which resembles a pair of calipers, has been designed to measure these folds.

THERAPEUTIC NOTES.

To Remove Papillomata of the Vulva.—Manciere (*Centralbl. für die Gesam. Ther.*, January, 1897) recommends mixture of flexible collodion five parts, and salicylic acid two parts, of which a single drop is to be applied to each wart. At one treatment eight or ten may be touched in this manner. On the following day the application is made to a number of others, and also to those previously treated. This is kept up daily until all are gone. The collodion does not affect the healthy tissue.

The Treatment of Painful Cystitis in a Woman by Vesical Curetting.—Camero reports (*Revue de Therapeut.*, February 1, 1897) twenty-nine cases in which this treatment was carried out through the urethra without distending this passage. After the curetting a catheter was left in for two or three weeks. A favorable result was obtained in two-thirds of the cases. In many patients the cystitis is located in the trigonum, and is therefore accessible for curetting. If this treatment fails, suprapubic cystotomy may be performed.

Ichthyol Internally.—Gunsbourg tells in the *Revue de Therap.*, February 1, of the internal administration of ichthyol to seventy patients in his gynecological clinic. The sulphichthyolate of ammonia was the form of the drug employed, and it was given in pill form to the amount of two to three grains per day. The drug had a favorable influence on the dyspepsia, complicated by constipation, which is so common in patients of this class. Defecation became normal and occurred daily. The appetite improved, abdominal pain grew less or disappeared altogether, while in many patients menorrhagia was also cured. No unpleasant effect whatever followed this treatment.

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PUBLIC SCHOOLS AS PERPETUATORS OF INFECTIOUS DISEASES.

IF any decided advance is to be made in suppressing contagious diseases among children, quarantine regulations in schools would seem to be a necessity. No better demonstration of this fact need be sought than is contained in the report of the first day's work of the school inspectors recently appointed by the New York Board of Health. Through the discoveries of these officers 140 children were found unfit for association with their schoolmates, and sent to their homes with notes to their parents informing them of the children's condition. Among these were fourteen cases of diphtheria, three of measles, and one of scarlet fever; thirty-five cases of contagious eye diseases, three of mumps, and one of croup; of parasitic diseases there were fifty-five cases where the head was afflicted, and twelve of the body; and there were eight cases of chicken-pox, and eight of communicable skin diseases.

When one realizes what a focus of dissemination each one of these cases may become in the close air of a crowded schoolroom the wisdom of the health board in instituting this system of inspection is worthy of all praise. The enormous diminution in the number of infectious diseases such precautions must bring about can be appreciated only by those who know how many mild cases of children's diseases are never seen by a physician. These will now be brought to light by the inspectors who will investigate the cause of absence from school, of children sick at their homes.

The reports of the inspectors seem to justify the claim made by Sanitary Inspector Lynd as the result of his personal investigations, that about two-thirds of all cases of scarlatina and diphtheria and all unusual and severe outbreaks of these diseases can be traced to schools. Under the old régime not only was it the frequent experience to find a disease well advanced in the contagious stage and already communicated to other children of the school before it was detected by parent or teacher, but also in families containing more than one school-attending child, another apparently healthy child was carrying the contagion to other classes or schools. Moreover, children still in a stage of infectious convalescence were quite apt to be returned to school and innocently become the foci of greater or less epidemics. It is to be hoped that the duties of the inspectors will not be confined to sending children home and writing notifications thereof to the Board of Health but that questions of hygiene and sanitation may engage their attention. The condition of plumbing, the practice of the teachers in regard to ventilation, the use of washbowls and towels in common, and last, but not least, the unwashed and offensive condition of some of the children. It is reported that one of the teachers begged the inspector who examined her class to send them all home; they were "so filthy to her eyes and nose that they made her sick."

REQUIREMENTS OF HEALTH BOARDS.

IN the issue of the MEDICAL NEWS, February 13th, appeared an announcement headed "The Minimum Requirements of the Pennsylvania Board of Health for the Production of Vaccine Virus, Antitoxin, Tuberculin, and Other Animal Products Used in Medicine." In this certain rules appear, followed by the statement that "no vaccine virus or other animal products will be approved by the State Board of Health of Pennsylvania unless propagated in accordance with the provisions of the aforesaid rules."

The methods of production and distribution of products, the character of which so intimately concerns the health of the people of a State, may well be the care of a State board of health. In a similar way the Boards of Health of New York and other cities have already exercised their authority to prevent the sale of certain unreliable antitoxins. Still, such extension of the authority of a health board is of comparatively recent origin, is not guided in its method by a long series of precedents, and therefore every instance becomes in itself a precedent of importance. So much the more care should therefore be taken that no unnecessary regulations be made; that all those made be well considered, and that in particular no decrees be promulgated about the wisdom of which there is not general agreement among competent judges.

The requirements of the Pennsylvania Board of Health, as stated in the above-mentioned announcement, do call, however, for the adoption of many measures which can in no way be considered necessary. Thus, for the production of the best vaccine it is not necessary that the walls of the stable should be of either painted boards or whitewashed plaster; it is only advisable that they should be tight and easily cleaned. The floor may well be of something else than the prescribed concrete. Animals less than the required three months of age may produce vaccine of the best quality; it is not necessary that the food should contain grain, when, as sometimes happens, the animal is a milk-fed calf. In the fifth regulation it is stated that "stables should be liberally bedded with clean white straw, hay, dry sawdust, or German peat. The latter, from its great absorbent power and antiseptic action, is highly commended." Bedding may well be of other material—excelsior, for example. German peat has not been shown to have any antiseptic action. In the same regulation it is observed that "in the winter term a temperature of 62° F. is correct." Is this a necessity, or would 60° or 65° F. be acceptable? In the sixth regulation it is stated "that animals should be . . . . washed thoroughly, if necessary, in such a manner as to render them practically *antiseptic* before operation." It may be supposed that the author meant that the skin should be made aseptic, but this requirement is also unnecessary, and is, in fact, impossible of accomplishment. The same is true of the requirement that "the skin of the animals should be kept sterile at all times." The regulations say that the "walls of the operating room shall be washed with bichlorid of mercury *from time to time.*" Rules so inexact can hardly win respect.

These do not by any means exhaust the list of inadvisable regulations, but they do emphasize the obvious conclusion that before such a list of requirements is issued by an authoritative body it should be carefully revised, and that the really valuable regulations, such as the one in the present list, that "every package of virus must have on it the name and address of the propagator and the date when the virus was taken," should not be covered up by a mass of other directions, impracticable in some cases, because of their misdirected minuteness, and objectionable in others, because of the impossibility of carrying them out.

The requirements for the production of antitoxin, tuberculin, etc., are less fully given, but are stated to be similar to those for the production of vaccine. The total difference in nature between tuberculin and mallein—the toxic products produced by the growth of the tubercle and the glanders bacillus—the curative serums obtained from the blood of animals and vaccine, from the serum and pulp of skin vesicles, do not seem to be appreciated by the authors of the circular.

It is eminently proper for health boards to require that samples of antitoxin, vaccine, and other bacterial and animal products shall have stamped on them the name of the dealer or manufacturer, their strength, and the date upon which they were tested or produced. It is also advisable that samples should from time to time be bought in the open market and carefully tested. It would seem, however, that great caution should be observed in making minute directions for the preparation of these products, because methods are constantly changing. Even assuming that the regulations promulgated are at the moment of their adoption the very best possible, yet before their distribution can be accomplished they may have already been superseded by better.

ECHOES AND NEWS.

A Princess as Trained Nurse. — Princess Frederick Leopold of Prussia is undergoing a regular course of training as a hospital and field nurse.

The College of Physicians and Surgeons of Chicago.—This institution has recently become legally the Medical Department of the University of Illinois.

The New York Colored Home and Hospital.—This institution has sold its property at the corner of Sixty-fifth street and First avenue for $210,000, and will secure a new site in the uptown suburbs.

Letters of Asylum Inmates.—A bill is pending before the Michigan legislature giving the inmates of insane asylums the right to correspond by letter with their friends of the outside world, unmolested by the officers of such asylums.

Hospital Property Exempt from Taxation.—A bill has been introduced in the New York legislature exempting from taxation that part of the New York Ophthalmic Hospital property that is rented out for the purpose of raising money to support the hospital.

A Victim of Cigarette Smoking.—A young man, aged twenty, died recently in Bellevue Hospital from nicotin poisoning. He was a victim of the cigarette habit, and frequently smoked, according to his father, as many as sixteen packages of cigarettes in a day.

Appointments of English Physicians. — Mr. Frederick Treeves, F.R.C.S., has been appointed by the Duke of York Surgeon-in-Ordinary to His Royal Highness, and Dr. A. R. Manby, Surgeon-Apothecary to His Royal Highness' household at Sandringham.

Ambulance Kills a Horse.—A Bellevue Hospital ambulance, in which were two patients, recently ran into a horse attached to a wagon. The shaft of the ambulance penetrated the shoulder of the horse and killed it instantly. The patients were shaken up somewhat, but sustained no injury.

The Chicago German Medical College.—The German Consul at Chicago having reported to the home government unfavorably on the Chicago German Medical College, and its alleged sale of diplomas, the Prussian government has ordered that all persons publicly exhibiting a degree obtained from that institution are to be prosecuted.

Improved Tuberculin.—Prof. Koch publishes in the *Deutsche Medicinische Wochenschrift* the result of his latest experiments in the treatment of consumption. He says that he has greatly improved his tuberculin. The bacilli which form the basis of the lymph are now destroyed as living organisms, while their curative properties for the early stages of the disease are retained.

Free Beds for Sick Doctors.—The Trustees of the Philadelphia Polyclinic and College for Graduates in Medicine have set aside one room in the Polyclinic Hospital for the use, free of charge, of any member of the Mutual Aid Association of the Philadelphia County Medical Society, whose financial circumstances require such concession in regard to hospital charges.

New Hospital for Harlem.—The city authorities have decided to erect a modern hospital in Harlem at a cost of $300,000. The site for the new hospital is not yet selected. One location proposed is on the northwest corner of 124th street and Madison avenue. The present hospital grounds at the foot of East 120th street have also been mentioned.

Opposition to Board of Health Inspectors.—Dr. R. M. Leverson, representing the International Homeopathic Society, is reported to have said in discussing, before the mayor, the provisions of the charter of the Greater New York relating to communicable diseases: "I would take a revolver and shoot down the health officer or policeman who would undertake to break into my house."

Fire at the Manhattan State Hospital.—The damage done by the recent fire in the Manhattan State Hospital for the Insane on Ward's Island is estimated at about $100,000. The success with which all the patients were removed from the burning building is an instructive comment on the organization and discipline of the institution. The patients whose accommodations were destroyed have been distributed among the branch hospitals.

Small-Pox in New York.—The Bureau of Contagious Diseases is fighting a small wave of small-pox which started among the Park row lodging-houses two weeks ago. Since that time eleven cases have been discovered. The disease has broken out again in the New York Hospital. All the victims and people exposed to the infection are accounted for and kept under careful supervision. The corps of vaccinators has been kept actively at work.

Bubonic Plague Attacks the British Troops.—A special despatch from Bombay says that the plague has broken out among the British troops at Calaba. According to the official list published in Bombay, the total number of deaths in that city for the week ending April 2d was 1111. Of these, 455 were due to the bubonic plague. During the last fortnight five cases of Europeans attacked by the disease have been officially reported. Two of these have proved fatal.

Pathological Society of Philadelphia.—The annual conversational meeting of the Society will be held in the Upper Hall of the College of Physicians, northeast corner Thirteenth and Locust streets, on Thursday, April 22, 1897, at 8.15 P.M. Dr. Ludvig Hektoen, Professor of Morbid Anatomy in Rush Medical College, will deliver an address, entitled "Segmentation and Fragmentation of the Myocardium." After the meeting a reception will be tendered Dr. Hektoen at the University Club, 1316 Walnut street. A cordial invitation is extended to attend the meeting and the reception.

Temporary Control of the Insane in New York.—The Medical Society of the County of New York, the New York Neurological Society, and the Society of Medical Jurisprudence are seeking an amendment to the insanity law which has been in operation since July 1, 1896, providing for the temporary commitment of dangerous or violent lunatics for five days upon the sworn certificate of two authorized medical examiners in lunacy, pending the outcome of the legal proceedings for final commitment. Dr.

P. M. Wise, chairman of the Lunacy Commission of the Senate, has returned it without his approval, saying that the present law had not been in operation long enough to attempt to change it. The bill is not without friends, however, for Senator Ford has promised to father the amendment in the Senate and urge its passage in the Assembly.

Duties on Mineral Waters.—Petitions to Congress often receive scant, if any, consideration, but it is to be supposed that favorable attention will be accorded by the United States Senate to the petition which the leading medical men of New York and other cities are presenting relative to the exorbitant, and in some respects prohibitive, duties proposed for mineral waters in the Dingley tariff bill. Mineral waters should receive special consideration by Congress, as they are valuable and necessary agents of hygiene and medicine. In fact, in previous tariff revisions Congress distinctly expressed itself in favor of free mineral waters, and as a result they have been on the free list over a quarter of a century. From the standpoint of the profession, no change in the conditions has occurred which would warrant a high duty on these products of nature.

A Keen Swindling Game.—Swindlers have been operating in Passaic, N. J., for the past week, and are said to have fleeced a number of physicians. A man and a boy about sixteen years old worked the game. The man would drive in a buggy to the residence of a physician, and summon him hurriedly. The boy always accompanied the man. His clothes would be very dusty, and he would be carried into the office of the doctor. There the man, who was evidently a Hebrew, would explain that the boy had been run over, and request an examination. When the doctor found that the boy had not been injured, although he complained of pains in the back, the man would ask the charge. The fee was generally $1, and in payment the man tendered a check for $5 on the First National Bank, drawn payable to Wallace Lawrence. The doctors usually cashed the check, giving $4 in change, and then, with apologies for disturbing him, the man and boy drove off. When the checks reached the bank, they were returned as worthless.

An Epidemic of Hiccough.—Miss Lucy Marshall of Centralia, Mo., began to hiccough last Christmas Day, and has been unable to stop since, although the best medical advice has been obtained. She is unable to sleep longer than a few minutes at a time, and may die if not relieved soon. About two weeks ago her younger brother began to hiccough, and has continued ever since. On March 28 a younger sister commenced hiccoughing and cannot stop. The malady threatens to affect the entire family, the members of which feel much alarm.—Louis A. Levy of Jersey City was attacked by hiccough while reading a newspaper in his store on February 26th. The hiccough has continued at intervals ever since. At first the spasms recurred every eight minutes. More recently the spasms recur only at intervals of three hours, the patient being able to take nourishment and sleep in the intervals. —William Bond of Glen Cove, L. I., who has suffered from two attacks of prolonged and incessant hiccoughing, is still very weak, although the doctors have succeeded in stopping the spasms.

One of the Uses of Microbes.—Dr. De Schweinitz, in his presidential address recently delivered before the Chemical Society of Washington, said: "When milk and cream are first collected they are almost free from germs; but exposed to the air, they soon become filled with those forms of life which are perfectly harmless. If placed under suitable conditions with regard to temperature, they will multiply very readily, and the milk becomes sour, due to the formation of lactic acid produced from the sugar in the milk by one or more of these germs. If the germs present happen to be those giving an ether and ester which have a pleasant flavor and aroma, good butter results; but if they give rise to the formation of disagreeable thio ethers and esters or some amines, the butter is poor and bad. Now, by isolating different germs found in the milk, and cultivating them separately so as to discover their own peculiar product, it is possible to always make butter of the same sort and flavor by first destroying the other germs present by Pasteurization and then inoculating the cream with the particular germ desired. A number of germs have been isolated from milk which will produce good butter, and any one of them is perhaps as good as the other, the ethereal product being slightly different and more palatable to different individuals. Of course, a great many germs have been found which produce disagreeable compounds, and it is not possible to tell from their appearance simply which is a desirable plant, but it is easy to cultivate them in milk and note the results, and select the desirable plant cell. Fortunately, or unfortunately, the use of these germs has been patented, so that in the near future we may see branded upon particularly fine butters and cheese, 'patented in 1893, amended 1896, reissued 1908,' etc. May we expect soon a patented process for breathing, eating, and sleeping?"

Obituary.—Dr. John O. Bronson died March 28th at his home in Rhinebeck, New York. He was born in Glastonbury, Conn., 1827, and was educated at Yale College and the New York Medical College, in which he became Professor of Anatomy in 1857. Several years later he took a course in hospital work abroad, and at the breaking out of the war he was appointed Chief Medical Director of the Department of the Pacific, which he filled for two years. He then served until the close of the war as Chief Medical Officer of the Department of the South. He returned to the practice of his profession in New York City, and remained there until 1880, when he retired. For a number of years Dr. Bronson was interested in the development of the State of Florida. Through his influence, the Alabama, Florida, and Atlantic Railway Company was formed. It built 550 miles of railroad, and opened up the entire Northwest to the productions of Florida.—Dr. Felix Cipriano Coronel Zegarra, well known in the United States as the representative of Peru at the Pan-American Congress, died at Lima, Peru, March 29th. —Word has just been received in Brooklyn of the death from jungle fever last January in Central Africa of Dr. Samuel G. Armour, a young physician in the service of the Belgian Government. He obtained his education at the Long Island College Hospital, where his uncle, the late Dr. Armour, was Dean. Dr. Armour graduated in 1892, and was interne at the hospital for two years. About a year ago, together with a number of Americans, Dr. Armour signed contracts with the Belgian Government to go to Congo Free State. It was a part of their mission to deal with the Arab slave hunters who infest portions of that country and break up their traffic. Dr. Armour sailed from this city for Brussels February 15, 1896. He landed at Boma, a town situated at the mouth of the Congo River, and proceeded, with his companions, up the river to Stanley Pool. There they were assigned to their stations.—Dr. Joseph F. James died at Hingham, Mass., March 30th. He was born in Cincinnati in 1857. Dr. James was Professor of Botany in the Cincinnati College of Pharmacy from 1880 to 1889, and Professor of Physiology, Biology, Geology, and Botany for two years at Oxford, O. He studied medicine at Washington Columbia School, graduating in 1895. After graduating, Dr. James took a course of lectures at Guy's Hospital, London, and at London Hospital Medical School. He leaves a wife and two small children.—Dr. George B. Twitchell, one of the leading physicians in New Hampshire, and President of the Keene Humane Society, died in Keene March 30th, aged seventy-seven years. He was a native of Virginia, a graduate of the University of Pennsylvania, and served with distinction during the civil war.—Dr. F. D. Dubois, for twenty years physician at Blooming Grove, Orange County, New York, died March 30th of pneumonia, aged fifty years.—Dr. Jonathan Burtis died in Hartford, Conn., March 31st. Death was due to stomach trouble. He was born in Epsom, N. H., June 11, 1821.—Dr. Walburg Coleman, a son of the late Dr. James Coleman, died in Trenton, N. J., March 31st, aged fifty-one years. He was at one time Surgeon-Major of the Seventh Regiment, N. G., S. N. Y.

CORRESPONDENCE.

NOTE ON THE SERUM-TEST FOR TYPHOID FEVER.

To the Editor of The Medical News.

Dear Sir: I desire to record the following brief note on a case of typhoid fever in its relation to the serum-test, in the hope that a certain peculiar feature may make it of value in the statistics of some future writer.

John M., aged thirty-five years, was seen by the writer January 3, 1897, suffering from what was believed to be typhoid fever. The diagnosis was based chiefly upon the temperature range, for there were no diarrhea, spots, or nosebleed. Tenderness was present only in the right iliac fossa, which, with the absence of important typhoid symptoms, made the diagnosis of catarrhal appendicitis probable.

To settle the uncertainty I decided to have the serum-test made, so at the close of the second week of the fever a specimen of the patient's dried blood was sent to the Bacteriological Department of this city for examination. Although the department was not at that time ready for the general examination of such cases, the acting chief made two careful tests and notified me that the reaction was negative and that the case was probably not typhoid.

All fever disappeared by the eighteenth day, and, after eight days of normal temperature a mashed potato was allowed. A relapse followed, running twenty days. Still there were no diarrhea, spots, or nosebleed, and the tenderness in the right side returned. The question of catarrhal appendicitis or typhoid fever remained undecided. About the middle and at the end of the relapse dried specimens of the patient's blood were sent to the department for further examination. Both of these specimens gave a marked reaction in a few minutes.

In a paper, upon the serum-test, by Drs. Bigg and Park (*Amer. Jour. of the Med. Sciences*, March, 1897), besides a statistical study of former reports, a detailed history of four cases was given. Three of these cases had relapse, and it is a significant fact that in two of them careful examination failed to get the reaction during the first attack of one case, and was not marked save in a dilution of one part of serum to four of culture, in the second case; while in both cases, as early as the second day of the relapse, an immediate marked reaction was found in a dilution of one to ten.

It has been found that in those cases of pneumonia where leucocytosis does not take place, it is safe to give an unfavorable prognosis. It is an evidence that the forces which fight for health and life are unable to subdue the disease.

In the light of these three reports may it not be found that the absence of the reaction during the first attack will prove an important warning that nature is not preparing enough antitoxin to make a recovery safe from a relapse?

Certainly, until fuller knowledge convinces me of the contrary, I shall be particularly solicitous during the convalescence of any patient suffering from typhoid fever where this action is absent or indefinite.

I write this in the hope that future reporters will notice this feature. Very truly yours,

W. C. Cahill, M.D.

Philadelphia, March 30, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

PHILADELPHIA OBSTETRICAL SOCIETY—THE DEATH-RATE FROM DIPHTHERIA—FILTRATION BY ELECTRICITY—COLLEGE-BRED MEDICAL STUDENTS—DR. JOHN H. EGAN—THE BOARD OF CHARITIES AND CORRECTION—COMMENCEMENT OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.

Philadelphia, April 3, 1897.

At a stated meeting of the Obstetrical Society, held on April 1st, Dr. H. A. Hare read, by invitation, a paper on "The Value of Quinin in Labor." Dr. Hare discussed the matter from every standpoint, and showed, by collected opinions of the leading obstetricians in this country, the great diversity of opinion which exists as to the value of quinin as an oxytoxic, and as a stimulant in uterine inertia during labor. The drug was regarded by Dr. Hare as a general stimulant, rather than as one possessing a direct action on the uterus.

Dr. C. P. Noble read a paper on the operation of hysterectomy following previous removal of the uterine appendages, and considered the symptomatology of the menopause after hysterectomy and after salpingo-ophorectomy. He cited six cases on which he had operated, and, along with Dr. Baldy, who discussed the paper, took the ground that the operation was an unsatisfactory one, and that the symptoms which were considered as indications for the operation were due rather to trouble in parts of the body other than the uterus, notably in the arterial supply.

Dr. George M. Boyd reported a case of retention of urine simulating pregnancy. In this case an immense vesical distension caused the woman to imagine herself pregnant; fifteen quarts of urine were withdrawn by catheter during the twenty-four hours after she first consulted Dr. Boyd, with the result that the tumor disappeared, and natural action of the bladder was recovered within the next four days. Dr. John C. Da Costa, in the discussion, recalled similar cases, and cited one in detail, which had been sent to him as a case of ovarian tumor. The use of the catheter removed both tumor and symptoms, nine quarts of urine being withdrawn.

During the past year the death-rate from diphtheria at the Municipal Hospital was 22.2 per cent. Of the 869 cases of diphtheria admitted to this institution during 1896, 553 received the antitoxin treatment in addition to other approved methods of treatment, and of these 142 died, a mortality of 25.67 per cent. Three hundred and sixteen other cases were treated by remedies other than antitoxin, and of these 51 died, a death-rate of 13.29 per cent. At first glance it would appear that this 12.38 per cent. difference in the death-rate demonstrates a decided failure in the serum treatment, but from the statement of the physician in charge of the hospital, Dr. William M. Welch, that a scientific test of antitoxin was not attempted, it may be inferred that the cases not receiving antitoxin were those of a character so mild as not to require it, and, therefore, of a low mortality. On the other hand, assuming that the severer cases received the serum injections, with a death-rate of over 25 per cent. as the result, does it not seem that the antitoxin has failed to materially improve the outlook in dealing with this dangerous malady?

The bacteriologic and chemic investigations which are being made to determine the efficacy of a new system of water purification by electrolysis are exciting interest in medical and sanitary circles. The water to be purified runs through a long wooden trough, in which are suspended three parallel sets of aluminum plates, the positive and negative being arranged alternately. On one side of the trough runs the positive, and on the other side the negative wire from a dynamo, between which the sets of aluminum plates are joined by "multiple connection." The water, flowing between these rows of plates is decomposed by a current of about twenty amperes, the resulting hydrated oxid of aluminum carrying to the bottom of the trough the heavier impurities, while the lighter impurities are floated to the surface by the gases of decomposition. The former are removed from the water by being dumped through a false bottom of the trough, and the latter are carried away by scrapers. A blast of a mixture of ozone and condensed air, forced through the water as it leaves the trough, completes the process. It is said that by this system a plant 100 by 200 feet in extent will "filter" 20,000,000 gallons of water daily, and that the cost of construction would not exceed $75,000. The amount of electrical current necessary for such a plant can easily be furnished at the expense of 50-horse power a day, so that it would appear that the cost of maintenance is inconsiderable.

Out of the total of 920 students in the Medical Department of the University of Pennsylvania, 230 have taken academic degrees, and over 100 additional have pursued for one year or longer collegiate courses prior to their matriculation in the medical school. This proportion of college men is an encouraging sign of the tendency toward a better-educated class of students in our medical colleges, and will undoubtedly increase hand in hand with a higher standard for admission to studies for the doctorate.

Dr. John H. Egan, who for the last five years has been Chief Resident Physician and Registrar of the Medico-Chirurgical Hospital, has tendered his resignation to take effect immediately. This action was taken by Dr. Egan on account of his desire to engage in general practice.

The appointment of the Board of Directors of the Department of Charities and Correction, who control the management of the Philadelphia Hospital, is a matter of real interest to many members of the medical profession in this city, and especially so this year, because of the rumored change in the *personnel* of the Board. The appointment of the directors will be made by the mayor on the fifth of the month, and the names of Drs. J. William White, Conrad Berens, and T. H. Andrews, are prominently mentioned in connection with the places.

The 123d annual commencement of the Medical Department of the University of Pennsylvania will be held on Wednesday, June 9th. The exercises will be conducted in conjunction with those of all the other departments of the university for the first time in ten years.

OUR PARIS LETTER.

[From our Special Correspondent.]

TREATMENT OF CERTAIN NERVOUS DISEASES—OVERCROWDING OF THE MEDICAL PROFESSION IN FRANCE—EXPENSES OF A MEDICAL EDUCATION.

Paris, March 8, 1897.

One hears Flechsig's combined opium and bromid treatment for epilepsy highly commended for cases that have proved recalcitrant to the bromid alone. It is no uncommon thing to see at the Salpêtrière, however, cases that are said to have been treated by bromids, sometimes in large doses, without noticeable improvement, improve rapidly, nevertheless, under a systemized course of the bromids. The system of dosage of the bromids comes from Charcot, who found it extremely satisfactory in the routine treatment of epilepsy, or, as it is often euphemistically called here to avoid wounding the feelings of sensitive patients or their friends, "*mal comitial,*" the comitial disease.

The formula given is:

℞ Sodii bromid.
Ammonii bromid. } aa . . . 23 grams
Potassii bromid.
Aquæ. . . . . . 1000 c.c.

During the first week (in ordinary cases) three teaspoonfuls a day is given; during the second week four teaspoonfuls; during the third week five teaspoonfuls, and then the original dosage is resumed and the course begun over again. When the case is more serious the dosage begins with a higher number of teaspoonfuls, but is increased in the same way. The merit claimed for the treatment is that it gets the patient thoroughly under the influence of the bromids with the administration of the least possible amount of the drugs.

Arsenic does not seem to be combined with the bromids as regularly as with us, but special attention is paid to cutaneous cleanliness and to intestinal antisepsis. Regularly frequent baths and douches are insisted on, something that does not seem unusual over here where the value of hydrotherapy as an adjuvant to other therapeutic measures seems much better realized than in America. As the intestinal antiseptic, benzonaphthol is sometimes used, but salol is much more generally employed, and Marie is even of the opinion that its "crossed action" adds to the direct therapeutic effect of the bromid. Now that urinary hypotoxicity in epilepsy is being more and more acknowledged, and the theory that it is in a certain sense a toxemia is gaining ground, this cross action of salol by its antiseptic effect on the great manufactory of toxins—the intestines—becomes easier to understand.

For the vertigo of Ménière's disease, of which one sees a number of cases, Charcot's empiric use of quinin in large doses is highly commended. It has not succeeded as well outside of France, but here, such great teachers as Raymond, Marie, and Gilles de la Tourette, insist that it *never* fails. The treatment is extremely unpleasant to the patient for a week or two, all the symptoms becoming more pronounced, and he has to keep his bed, but certain improvement is promised. All the same, the use of the salicylates on the same empiric grounds, is suggested and they are sometimes used when the quinin fails.

For chorea, antipyrin is used routinely instead of arsenic, though sometimes the two are combined. One of the nervous specialists said the other day, though not for authoritative publication I think, that it did not make much difference what remedy was used in chorea, that it was always the improvement of the general health that was the signal for the disappearance of the troublesome symptoms, and that no remedy seemed to affect them unless that was secured.

In Europe, almost more than in America, if possible, the serious complaint is being heard that the medical profession is becoming overcrowded. In France this has been the subject of a good deal of writing in the medical journals recently. Paris has now one physician to about every 600 of population, and other places are comparatively no better (or worse) off in this respect. The different universities of France have nearly 10,000 medical students in attendance (Paris alone has nearly 5000 of these) so that the state of affairs promises to grow worse rather than better. The great mass of the French working people, unlike our own, are unable to pay a physician at all, or able to pay him very little, and the dispensaries are crowded with patients. It is not any wonder, then, that the French doctors are in favor of measures that will tend to restrict the number of practitioners. Hence, the recent addition of a year to the time necessary for preparation for the medical degree, and the recent stringent regulations which practically exclude all foreign practitioners and even discourage the attendance of foreigners at French universities unless they expect to practice outside of France. Various suggestions have been offered that might help to deplete somewhat the number of practitioners in France Professor Brouardel, the dean of the medical school, has recently publicly called attention to the fact that there are in Canada 1,500,000 French-speaking people who would prefer to have French-speaking doctors and who cannot always get them easily. Splendid opportunities, it is also pointed out, are open to the French medical men in South America. Frenchmen, however, are deeply attached to the soil, and find it extremely hard to expatriate themselves, so that these suggestions will prove of doubtful utility.

Recently the medical journals have been laying stress upon the expenses connected with obtaining a medical education and the comparatively small returns for the general mass of practitioners in the hope of discouraging parents from allowing their sons to take up the practice of medicine as a life-work. The figures are interesting. It costs from 20,000 to 30,000 francs ($4000 to $6000) for the five years of a medical education, and another 5000 francs are set down as necessary to launch the young practitioner on his medical career. The modern doctor is evidently a high-priced product of our nineteenth century civilization everywhere, but the law of supply and demand holds good for him as for everything else, and the crowding of the profession is fast cheapening his personal value.

TRANSACTIONS OF FOREIGN SOCIETIES.

London.

TRAUMATIC NEURASTHENIA—THE DEATH-RATE OF NEPHRECTOMY REDUCED BY THE USE OF THE CYSTOSCOPE—SUBSTITUTION OF THYROID COLLOID FOR THYROID TABLETS—THREE CASES OF RAPID ABSORPTION OF AN ABDOMINAL TUMOR—A PLASTIC OPERATION FOR ULCER OF THE LEG.

HORSLEY read a paper on "Traumatic Neurasthenia" before the Medical Society, February 22. He grouped the cases under four heads according as there was, or there was not, an external injury, and according as the result occurred immediately after the receipt of the injury or at some later period. There is no essential difference between cases of traumatic neurasthenia and ordinary neurasthenia from overwork. Important symptoms are inability to concentrate the attention on any particular subject; disturbances of sleep, especially in the form of early waking; and the occurrence of nightmares or somnambulism. General paresis with twitchings, spasms, and local paralysis usually in the form of hemiplegia of one lower limb sometimes occurs. The tongue is often deviated toward the paralysed side. Smell, taste, and hearing are rarely affected; sight more often so, usually in the form of asthenopia. Various subjective sensations of touch are complained of. Superficial reflexes are at first increased and then abolished, and there is usually ankle clonus. The painful manifestations are usually well localized, especially in certain spots, as, for instance, over the bregma, over the areas served by the posterior branch of the second cervical and the sixth dorsal nerves, the dorsolumbar juncture, etc. Patients often complain of palpitation, particularly at night. The quantity of urine is greatly increased and the percentage of solids diminished.

All of these symptoms are explicable on the supposition that the disease is a disturbance of the central nervous system, and Horsley's experience has convinced him that none of the severe cases recover until they have undergone a course of the Weir Mitchell treatment. Relapses are very likely to occur, even after long intervals of apparent recovery.

CHURTON has seen a number of cases to which formerly the term "miners' neurosis" was applied. The illness was imperfectly understood, and was variously ascribed to ineffective hygiene, syphilis, alcohol, tobacco, etc. It was found, however, that miners often received more or less severe blows on the head or spine, even to the extent of causing unconsciousness, to which they attached so little importance, that they did not think it worth while to mention them to a doctor, but inquiry along this line has shown that there is in almost every instance a distinct history of traumatism. Churton feels that very few of the railroad cases at present met with belong to the class of malingerers, for long after the question of compensation has been settled they sometimes develop myelitis.

FENWICK called attention to *the high death-rate of nephrectomy*, which is largely due to the removal of kidneys which have become affected by tuberculous or malignant disease. One of the chief values of the cystocope is its use in helping us to determine the working capacity of the kidneys. A judicious and skilful use of this instrument not only renders the surgery of the kidney more precise, but also tends to lower the death-rate. No patient with tubercular deposits in the epididymis or the prostate or obvious disease of the bladder should be examined. Carelessly employed, the cystoscope has a death-rate of its own, and it would be better to do exploration on both kidneys than to damage both of these organs by the ascending septic changes brought about by bungling work in the bladder.

All cases of profuse hematuria, either without symptoms or accompanied by slight renal pain, should be judiciously examined with the cystoscope without delay, an operation on the kidney or bladder being permitted and carried out with this cystoscopy. All cases of severe symptomless pyelitis, without implication of the lower urinary or genital tracts, should be judiciously cystoscoped to demonstrate the working capacity of the kidney and to locate the diseased kidney. In women, Kelly's method of catheterization of the ureters is probably a more certain form of exploration. Fenwick has performed nephrectomy after cystoscopy twenty-one times with two deaths, and he attributes this favorable mortality to the use of this instrument.

LOCKWOOD was surprised that Fenwick should declare himself against suprapubic cystotomy with scraping in cases of tubercular ulceration of the bladder, for he has seen several cases in which the operation had afforded great relief. In reply, Fenwick said that small and single ulcers were favorable cases for treatment by suprapubic cystotomy and scraping, and it is difficult to say positively whether these cases are tuberculous. When the tubercular ulceration is extensive scraping can do little good.

At a meeting of the Border Counties' Branch of the British Medical Association, held February 12, PARKER described his experience with *thyroid colloid and thyroid tablets.* He has been especially successful with thyroid treatment in producing the decrease of adipose tissue. In two years he has given over ten thousand thyroid tablets. Recently he has been using tablets made of the colloid constituent in the thyroid gland, and, as a result of these experiments, he has come to the conclusion that a tenth of a grain of colloid is about equal to five grains of thyroid. In some patients he was able, with colloid, to reduce the weight nearly a pound a day without any bad symptoms. He had encountered only one failure. This patient was a woman weighing 173 pounds. She received the same dose he had given to the other patients, and after about three weeks she weighed practically the same as she did before. He had found in cases where patients had taken thyroid extract in undue doses, say about four a day, there was an increase of pulse, and the patient was hot and feverish, sickly, and lost appetite.

At the meeting of the Leeds and West Riding Medical and Chirurgical Society, held February 5th, CHURTON showed *three cases of rapid absorption of tubercular masses in the abdomen.* A boy, aged ten years, with ascites, was given one grain of iodoform in extract of gentian every four hours. Four weeks later the fluid was all gone, but two thick masses remained, one extending from the left costal margin to the umbilicus, and the other in the right lower epigastrium. Four months later there remained only a small area of thickening above and to the right of the umbilicus.

A woman, aged thirty-seven, was admitted to the hospital, with a morning temperature of 98° and an evening temperature of 102° F. Similar treatment was followed out in her case, with the addition of five grains of quinin three times a day. In five weeks the ascites disappeared, and the patient returned home. Six weeks later her abdomen again began to enlarge, and four months after her first admission she was readmitted, and 440 ounces of serous fluid was withdrawn by trocar and canula. A mass the size of two small fists was found in the mid-abdomen. The patient was put upon two grains of iodoform, three grains of extract of gentian, and one ounce of quinin mixture (three grains) three times a day. In two months the mass had entirely disappeared. In a man lately under observation, less favorably placed and less healthy, the absorption of a similar mass occupied nearly a year.

Teale described a case of biliary colic and jaundice, supposed to be due to obstruction of the common duct by a gall stone. Operation was decided upon, but was postponed because the patient was certain some change had taken place in the position of the stone. The next movement contained bile, and a fortnight later, after severe rigor and intense pain, followed by the symptoms of general peritonitis, the patient recovered. Unfortunately, all of the stools were not sifted for gall stones, and none was found. The case is interesting as illustrating the spontaneous recovery after a complete blockage for eight weeks and three days.

Wallis showed a man, at the session of the Clinical Society, held February 26th, who had a large intractable ulcer in front of the shin, the result of traumatism, which had increased in spite of the ordinary treatment. He made two long longitudinal parallel incisions, each, at its center, an inch and a half from the adjacent edge of the ulcer, and having separated the skin from the subjacent tissues, he freshened the edges of the ulcer, and brought them together in the middle line, leaving two gaps representing the lateral incisions, which he filled in by Tiersch grafts. The result, on the whole, had proved very satisfactory, although healing had not yet become entirely complete.

SOCIETY PROCEEDINGS.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF NEW YORK.

Stated Meeting held December 16, 1896.

The President, **Dr. Henry Ling Taylor**, in the Chair.

J. Blake White, M.D., read an address in memoriam of Dr. Thomas H. Burchard.

A. R. Robinson, M.D., then read the paper of the evening, entitled

THE IMPORTANCE OF EARLY TREATMENT OF CANCER,

which he illustrated with a number of drawings and photographs. (See page 449.)

DISCUSSION.

Dr. William Stevens said that he had been present not long ago at an operation performed by Dr. Abbe, in which he had removed an eye from a woman thirty-three years of age, who had been operated upon five times during as many years for epithelioma of the inner corner of the eye. He asked the author if there was not at times great difficulty in differentiating epithelioma of the lips and mouth from chancre.

Dr. Robert Newman agreed with the author in his opinion that cancer was a local, and not a constitutional disease, although authorities did not agree on this point. The only obstacle to early treatment was the fact that patients did not consult the physician early enough.

Dr. J. H. Fruitnight referred to the fact that the progress of the disease was usually slow unless there was external irritation, in which case it was unwise to defer treatment. He had recently referred three cases to Dr. Robinson, all in the early stage, before ulceration had begun, and the disease had been thoroughly eradicated. The scars were insignificant.

Dr. L. Duncan Bulkley agreed with the author in regard to early and radical treatment. In many cases he had been present when the knife was used, and had insisted upon a large incision and wide removal. He also thought the term "reappearance" better than "recurrence." As the author had pointed out, the fact that an epithelioma might occur after any injury in which changes took place that could take on malignancy, was a valuable one to bear in mind. The speaker said that he did not use the arsenious paste as much as formerly, for he had found that thorough curetting gave better results. For this purpose it was necessary to use a very small curette, so that it might be drilled into the tissues like a gimlet. The procedure was not particularly painful and could be done without an anesthetic, and the scar which resulted was superficial. He had come to the conclusion that cocain was not desirable in these cases, as it made the healing process slower and much less satisfactory. He had also used chlorid of zinc with good results in cases of epithelioma.

Dr. S. H. Dessau recalled a case which illustrated very forcibly what the author had said in regard to the irritation of these growths. A woman had had a small nodule in the breast, accompanied by pain, for a couple of months, which he had advised her to have removed. He did not see her again for two or three months, but in the meantime she had consulted a quack, who had applied a paste to her arm with the idea of drawing the disease out of the breast. The arm was enormously swollen and inflamed. The breast had not gone on to ulceration nor had the nipple retracted. The woman died shortly afterward.

Dr. J. Blake White thought there was no doubt that all cases of cancer should be treated early, but that there were some instances in which the powers of the diagnostician would be pretty severely tested, even with the aid of the microscope, in the early manifestations of this disease. He recalled a case in which specimens were given to two microscopists, and they returned different opinions.

Dr. John F. Erdmann asked the author if cystic tumors had ever been known to take on changes characteristic of scirrhous cancer, and also, what treatment he would advise in inoperable cases?

Dr. W. Gill Wylie said that he had had more experience with cancer in other parts of the body than on the face, and that it was even more difficult to get the cases early, because the disease was not in view and did not attract the patient's attention. In cases of cancer of the uterus, he removed that organ completely with the tubes and ovaries, and, sometimes, with the upper part of the vagina, with very good results. He preferred to do this by the abdominal rather than the vaginal method, because in the former he was better able to determine the extent of the disease. The prognosis in cancer of the vagina was more favorable than in cancer of the uterus, because there was less tendency to lymphatic gland involvement. The cases were usually seen late, because the disease was most apt to appear at the time of the menopause, and the popular belief that "change of life" accounts for every conceivable symptom that occurs is held even by doctors. Then, too, often there was no pain and no hemorrhage in these cases until they were beyond hope. He thought that the "tinkering" which many of these patients receive did much to make the cases hopeless. He had had most excellent results in treating cancer of the uterus by curetting, followed by an application of a saturated solution of chlorid of zinc, protecting the tissues with a solution of bicarbonate of soda. He had never seen a case in which sloughing of the bladder or rectum was caused by it.

DR. J. RIDDLE GOFFE said that with proper attention the early diagnosis of cancer was possible, and, when recognized, the most radical treatment permissable, along the lines laid down in the paper, was demanded.

DR. A. M. JACOBUS recalled the case of a man who for years had had a wart on his neck which was supposed to have been caused by the friction of his collar. Nitrate of silver in the solid stick had been applied, and from that time on the tumor grew rapidly, the glands became involved, and the man ultimately died. The case illustrated the fact that the man might have lived for years had not the growth been stimulated by the nitrate of silver.

DR. R. A. MURRAY said that the author had referred to the knife and arsenious paste as treatment, and asked if he advised nothing else. In the treatment of cancer of the uterus, he thought the best results had been obtained by Dr. Byrne of Brooklyn, by the use of the galvanocautery. In his statistics for the last seven years, Dr. Byrne reported thirty-five per cent. of cures, and in these cases the diagnosis was confirmed by microscopic examination. The cautery destroyed the epitheliomatous tissue by charring, and so mummified it that there was no bleeding. No scarring resulted, and he wondered that it had not been tried in cases of epithelioma of the face.

DR. ROBINSON, in closing the discussion, said that intentionally he had not taken up the subject of different methods of treatment. As the title of the paper indicated, he had dwelt upon the importance of early treatment of cancer, and he had endeavored to show the necessity of this by the etiology and histology of the different types of the disease.

In reply to Dr. Erdmann's question as to whether cysts ever became scirrhous cancer, the speaker said that he had never seen such a case. These tumors were made up of a large amount of new connective tissue cells and plasma cells, and he thought their growth was too rapid to admit of scirrhus changes. He had operated upon what he supposed was a sebaceous cyst on the forehead of a patient, and had found no capsule. Examination under the microscope showed it to be an epithelioma. He removed it with the knife and applied arsenious paste, and, although three years had elapsed, there had been no reappearance of the disease.

In regard to the treatment of inoperable cases, he said that the profession was not in possession of any means that would have any positive curative effect on the so-called "inoperable" cases of cancer, but that there were many things which would prolong life and reduce the size of the tumor. The patients should be made to follow a course of diet and medicine which would cause a change in the nutrition of the part. This would have an inhibitory action on the organism which caused the disease, less toxin would be formed, and growth proliferation, which depended on the influence of the toxins, would be controlled. If no toxins at all were formed, epitheliomata would have no reason for existence.

THE GERMAN MEDICAL SOCIETY OF THE CITY OF NEW YORK.

Stated Meeting held February 1, 1897.

The President, DR. W. FREUDENTHAL, in the Chair.

DR. SIMON BARUCH read a paper on

FAULTY HYDROTHERAPY,

Which he opened with the statement that, despite its antiquity, water has not yet obtained a firm footing in therapeutics; despite its marked clinical results, it still requires to be brought to the attention of practitioners; despite its espousal by the best authorities in ancient and modern medical practice and literature, the average medical man is not familiar with its history, action, and merits. Dr. Baruch regarded as the chief reason for this state of affairs the absence of instruction in hydrotherapy in the curriculum of medical schools, to which is due the ignorance of the rationalé of the action of water and the unfamiliarity with its correct application, which are found among the majority of medical men. The consequent indifference to definite methods has rendered its application in the hands of many unsuccessful and discouraging. Failure is the sure result of inattention to details. As the physician must judge the value of a remedy by his experience, it followed that failure to achieve the results which the experience of others had led him to expect has brought this remedy into disrepute, the fact unhappily remaining unrecognized that not the remedy, but its improper application was at fault.

Although water is a simple remedy and appears to be so easily applied, no remedy in the entire materia medica demands a like judgment and care in its application. As an illustration an incident was referred to, showing how a brilliant young hospital physician shrank from the Brand bath in typhoid fever, because he had seen a patient die under cold-water treatment, which consisted in wrapping the patient in a sheet and sprinkling her with ice water. The object of the Brand bath is to sustain the nerve-centers first and to reduce the temperature secondarily. Although the latter was regarded as an index of gravity in most cases, the bath was not intended to combat it. A bath of 65° F., with friction for twenty minutes every three hours, whenever the body temperature reached 102.5° F., is calculated to arouse the nerve-centers from their lethargy and give an impetus to all the dormant functions depending upon them. The low temperature of the bath irritates the peripheral sensory filaments, from which the irritation is conveyed to the central nervous system, to be reflected upon the heart, lungs, and secreting organs. Friction adds to the irritation by multiplying it, the cold water being kept in motion; cold affusion over head and shoulders is added to promote the same object. *To whip up the nervous system* (as is done in cases of poisoning by narcotics) is the object of the Brand bath. But day by day, with occasional disappointments, a fifth, or a quarter, or a half degree of temperature is gained; the heart maintains its vigor, the kidneys increase their work, the stomach receives more kindly the proffered nourishment; sleep is won.

By this method the enemy cannot be routed, the disease cannot be shortened, but we hold his ravages in check surely and completely until his reinforcements fail. The bacterial life period reaches its end, the toxins cease to be evolved, and at last the physician stands conqueror of this deadly enemy. This is the true aim, the correct rationalé of the Brand bath. Were temperature reduction the chief need, we would have the key to the situation in our splendid coal-tar antipyretics; were pulse reduction the desideratum, veratrum viride would prove an open sesame; were nourishment the chief object, there is no lack of this in modern culinary and chemical art. But all these are as naught in the face of a toxemia which overwhelms the nerve-centers of the most robust as well as the most feeble patients. To wrap the patient in a sheet and then sprinkle him with ice-water, as was done in the case cited, is a deviation from the correct technic of the typhoid fever bath. Such a procedure does not fulfill the main object of arousing the nervous system. After the first shock has passed, no opportunity is given for reaction, because the sprinkling of ice-water continues, the cutaneous vessels and elastic tissue of the true skin contract, as evidenced by cutis anserina; the extreme cold imparted by the wet sheet, without remission, benumbs the sensory nerves and thus impedes the transmission of the shock and subsequent stimulus, even if the latter has ensued in an exceptionally strong individual. This faulty technic frustrates completely the true aim of the cold bath. The surface temperature is, indeed, reduced by this improper method, but the blood is driven to the interior, congestions are favored, the organs are overloaded, and the patient emerges from such a bath (save the mark!), a shivering, cyanosed weakling. The ideal results obtained by Brand and others in 1200 cases, without mortality, can only be realized by following the exact technic of Brand.

Dr. Baruch claimed that physicians have failed to obtain ideal results, because they deviated from the ideal technic, each one modifying it to suit his own fancy. He insisted that to the free deviation from its correct technic may be ascribed the lack of appreciation of the therapeutic value of the Brand method. Those physicians who have mastered its technic will agree with Prof. Delafield, who teaches that immersion in cold water is the only real treatment of typhoid fever, and the only way to practice this treatment is the exact method of Brand. In the treatment of all diseases our teachers insist upon correct dosage of medicinal agents, the exact time and mode of their administration, frequency of repetition, and even their exact preparation. Similar care and attention should be given to the prescription of water as a remedy.

In chronic diseases a correct application of water is quite as important as in the acute. A prescription for a bath or other hydropathic procedure, without exact statement of temperature, duration, pressure, and method, is as absurd as a prescription for a medicine without stating dose and method of administering. The import of pressure, temperature, and duration of every hydropathic procedure requires to be impressed with emphasis. Every physician realizes the difference of effect arising from different temperatures, and yet we commonly read directions for cold, hot, or tepid baths. By gradually accustoming tuberculous patients to lower temperatures and stronger pressure, very favorable results have been obtained in private and hospital practice. If low temperatures are used at once the patient is shocked and depreciated. The same may be said of neurasthenic and other chronic cases, in which Dr. Draper was cited as claiming that "the results of hydrotherapy are striking, but more effective than medicine."

The author especially inveighed against the gradually cooled bath, which is intended to avoid shock and be pleasant to the patient. Such a bath does not fulfill its object properly, because the surface vessels are relaxed by the warm water; reactive capacity is diminished by its calming and sedative effect. The vaso-constrictors are depressed. The subsequent cooling of the water finds the sensory nerves unprepared, and chilliness usually results unless the patient be more robust than is the average neurasthenic. It is unhappily a very prevalent error to regard the most agreeable bath as the most salutary. We do not so reason in the application of medicinal agents, of electricity, or diet. And the application of water may be made agreeable by gradually accustoming the patient to lower temperatures, slowly reducing them every day or two, making the application brief at first, and increasing the duration and pressure day by day. The prime essential, however, should always be borne in mind, that reaction is our aim, that this cannot be evoked without some shock, that the more intense the latter the more effective the reaction, but the more brief it is, the less unpleasant. If the physician bear in mind that his object in treating such a case is an increase of the quantity of blood circulating in the cutaneous vessels, an enhancement of the nutrition, a stimulus to the entire nervous system, he will endeavor to so order the technic, provided he has mastered its details, so that day by day the reactive capacity may be elevated. As the shock and reaction increases day by day, the patient will emerge from the treatment with a ruddy hue. The increased circulation will endure more and more every day, languor and loss of appetite will cease, and if the patient does not fully recover under this domestic treatment, douches of the same temperature and with a pressure of twenty-five to thirty pounds, preceded or not by hot-air baths, will bring about a final restoration of health.

In acute cases like typhoid fever, which are under constant observation of the physician, the latter may at once note the result of an improper use of water and modify it, or, as is more often the case, relinquish it altogether. But in chronic cases much damage may be done before the physician discovers it, if the treatment be not in the hands of trained and intelligent attendants who are under medical supervision. Too often the details are left to nurses, because physicians have not received instruction in the rationalé and technic.

Dr. Baruch concluded by saying:

First. That the therapeutic application of water demands at least as much care as the use of medicinal agents.

Second. That, owing to the flexibility of water as a remedial agent, greater demands are made upon the practitioner than in the use of medicines.

Third. That the best results may be obtained only by following an exact technic in each case.

Fourth. That the reason that different results are obtained by different physicians from the application of water may be found in the technical errors committed on account of an erroneous conception of the rationalé of hydrotherapy.

DISCUSSION.

DR. I. ADLER said that in the most modern medical view hydrotherapy plays an important rôle, and that, as Dr. Baruch had emphasized, the application of water is so lax that, clinically and diagnostically, much less is accomplished than would otherwise be. But this is not alone the fault of physicians, but, perhaps, as much of those who specially cultivate hydrotherapy. The latter seems to be based more on personal impressions than scientific data. We cannot accept water, therefore, on the same basis as our medicinal agents. As an example, the physiologic action of strychnin upon the spinal cord is exactly known, but of water we cannot say this. There should be a knowledge of the physiologic action of water ere we are asked to accept it as a scientific remedy.

Dr. Adler thought it is going too far to accept the baths as the only remedy in typhoid. To him the statistics cited by Dr. Baruch, to prove that the mortality has been reduced to almost nothing, are new. He had used the baths more in hospitals than in private practice, where the treatment is more difficult to apply. One may have very good results without baths, although the latter are one of our very best agents where the heart is feeble, delirium is intense, and somnolence occurs. He could not accept Brand's rule, supported by Dr. Baruch, that 102° F. should be the signal for baths. Some patients become delirious at 100.5°; others may have a temperature 105° F. and not be delirious. He also expressed confidence in small doses of antipyretics, which afford much relief, although he did not approve of their routine application for temperature reduction.

DR. L. WEBER had always used cold baths in typhoid in the absence of kidney complications. He begins the treatment with a large dose of calomel to clean the intestinal tract and disinfect it. In private practice he had not often had an opportunity of applying the Brand method. There seems to be a silent but active opposition to it among the nurses. There is no doubt that Brand's method offers great advantages, and is specially adapted for enhancing the resisting capacity of the nervous system. He used antipyretics in small doses for temperature reduction. In neurasthenia he had seen much of hydrotherapy. It seemed to him, however, that many of these cases recover under any treatment.

DR. A. ROSE opposed Dr. Adler's views that hydrotherapy was not based upon sufficient scientific investigations and experiments. It would seem that the statements of quacks are more regarded than these scientific experiments. He referred to the plethysmograph of Winternitz, by which the passage of blood, driven from one part of the body by cold baths, was demonstrated in other parts. Dr. Rose referred to his experience in erysipelas, and his observations with the permanent baths in obstinate rheumatism.

DR. A. SEIBERT believed that the complaints made by hydrotherapists, that their doctrines have not been generally accepted by the medical profession, are to be charged to their own writings, in which they use many hyperboles. The Brand bath is not responsible for the reduction of mortality of typhoid fever during the past thirty years; it is due to the general improvement in the treatment of the disease. A large acquaintance with statistics enabled him to say that many sins are committed with statistics. In his hospital practice he uses the Brand method only on patients who are received in a somnolent condition. He prefers to reach the seat of the disease by cleaning and bathing the intestinal tract rather than to cool the skin and then excite the nervous system. He regards as novel the claim that the early adoption of the Brand method is capable of affording absolute protection against complications.

DR. TALMEY believed that one reason for the nonacceptance of hydrotherapy lies in the objections of the public; another reason lies in the insistence of the hydrotherapist upon so many details, which no ordinary man is presumably as capable of executing as they.

DR. BARUCH closed the discussion by insisting that the proof exists showing that the action of water is more rational and scientific than that of any other remedy. Very little is known of the action of strychnin in non-toxic doses. It may be administered for days, weeks, and months without any subjective or objective evidence of its presence, in the pulse, blood pressure, respiration, etc. Of water we know much more. It may be dosed with precision afforded by a latitude of seventy degrees of temperature (35 to 110), a duration of a second to many minutes, a pressure of from one to forty pounds. We also have various methods of applying it (by packs, baths, douches, etc.), by which its effects may be graded. A few days ago he subjected an attendant in the Hydriatric Institute to a tub bath of 80° F., for ten minutes. The effect was at once pronounced upon the pulse, as ascertained by the finger and the sphygmograph; the blood count showed an increase of 700,000 red cells and 1500 white cells in blood drawn from the lobe of the left ear. Is any analogous experiment with non-toxic doses of strychnin on record? So far from there being a lack of scientific experiment regarding the action of water, many have been made within the past five years, in Zunt's and other laboratories by Breitenstein, Loewy, Knoepfelmacher, and others. Thayer, of Johns Hopkins Hospital, has confirmed the statements of Winternitz and Rovighi, that the red and white blood-cells increase after cold-water applications; the sphygmomanometer has demonstrated that the force of the heart is increased by them; Vinaj has shown with exactness by the ergograph of Mosso how the muscular power is enhanced by them; Roque and Weil have shown that the urotoxic coefficient of the urine in typhoid fever is manifoldly increased after the use of the cold bath.

That early cold baths prevent complications has been demonstrated as no fact in medicine has been demonstrated before. Dr. A. Vogl, Medical Director of the Bavarian Army, has collected from the records of the Military Hospital of Munich all the cases of typhoid fever which were treated during a period of forty years in this hospital. He gives the type of the disease each year, the symptoms, the treatment, mortality, and results of autopsy. Since the strict bath treatment was adopted he found the mortality reduced to 2.7 per cent., while under other methods of treatment it had ranged from fifteen to thirty per cent. This proves that the result is not due to a change of type in the disease, which the records show to have varied from year to year during this long period, but that it is entirely the result of the bath treatment which prevented lethal complications. Although the Brand method must be applied before the fifth day, every fever patient may be bathed with advantage. Dr. Baruch stated that he invariably uses it in private practice; that he declines to treat the patient otherwise, and that he has been dismissed from a case but once for this reason.

Contrary to Dr. Talmey's naïve accusation, modern hydrotherapists have taken pains to simplify hydrotherapy and make it the common property of physicians. But this cannot be accomplished so long as the latter persist in their skeptical attitude. The most superficial study will demonstrate that water produces a thermic and mechanical excitation of the cutaneous nerve endings which operate upon motor and sensory tracts as a reflex upon the circulation, respiration, and secretions. These demonstrations are so abundant in literature that he would regard it as an insult to the intelligence of his audience to reiterate them.

That a woman may be aroused from syncope by the simple sprinkling of cold water upon the face, is known to almost every lay person, and the scientific explanation of this process is recognized by every tyro in medicine to be a powerful irritation by cold, which is conveyed from the cutaneous nerves to the central nervous system, and thence by reflex to the vagus. This seems, perhaps, too simple. Rabbits and guinea pigs are not required for the "scientific" explanation of this powerful effect. If such sacrifices are demanded, however, to establish water as a scientific remedy, the classical experiment of Maximilian Schüller upon trephined rabbits may be offered. Schüller exposed the vessels of the pia, and placing the rabbits in water at different temperatures, observed the effects of these applications on the animals. He demonstrated more clearly than has ever been done in the study of any medicinal agent the effect of these water applications. He showed conclusively that the latter called into action a hydrostatic effect, which makes water a powerful agent for influencing the circulation of blood in an animal. Besides, Winternitz and others have demonstrated in the most exact manner, by laboratory experiments, that the corpuscular elements of the blood are subjected to such decided changes by water applications that no medicinal agent is capable of approaching their effects.

To Dr. Talmey's insinuation that hydrotherapeutists are so insistent upon details that it is difficult for an ordinary mortal to follow their directions, Dr. Baruch replied by protesting against the tendency of physicians to leave the water treatment of chronic cases to bath attendants, or other nurses who claim to know all about it, but really do not know anything but the mechanical part. Does not every physician who orders a cold bath in typhoid fever give the nurse directions regarding temperature, friction, drying, duration, etc.? Why, then, should physicians leave such important details to a nurse when ordering a wet pack, douche, etc., for a chronic case? Would it not be far easier for physicians to consult some work on this subject and use their own judgment in ordering the necessary temperature, duration, etc.? It is just as absurd to leave these important details to self-important bath nurses as it is to leave the doses of a medicine to the druggist to prescribe and administer. Indeed, the latter would be safer, because the druggist is, at least, an educated man. As Vogl has said, leaving the treatment entirely in the hands of lay people has brought hydrotherapy into disrepute.

That the hydrotherapists "resort to many hyperboles in their writings and lectures" may, as Dr. Seibert states, be true. But the most eminent physicians also resort to "hyperboles" when they have mastered hydrotherapy and applied it correctly.

Dr. Baruch said that he might quote many "hyperboles" from the writings and lectures of the most eminent clinical teachers. These gentlemen have not been deterred by the "hyperboles of the hydrotherapists." They have investigated the subject, as have Delafield, Peabody, Osler, and Draper in our own country, and have become consistent advocates.

One thing Dr. Baruch desired especially to emphasize, namely, that in his article, as in all his writings, he has never lauded water as a universal remedy. He claimed that his observations in hydrotherapy were gathered in the capacity of family and hospital physician, in which respect he stands alone. As a practitioner of thirty-five years' standing, he did not feel prepared to throw aside calomel, salicylic acid, morphin, quinin, and other approved remedies. Despite this fact he felt compelled to acknowledge that water has served him well in the most desperate chronic cases after other most approved remedies had failed in his own hands as well as in the hands of colleagues. For this reason he would say with Pindar, *αριστον με̋ ν ὕδωρ*. And herein he felt himself sustained by the most eminent clinicians of the present time, whose opinions he desired to impress upon his colleagues.

REVIEWS.

A Handbook of Pathological Anatomy and Histology, with an Introductory Section on Post-Mortem Examination and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M.D., and T. M. Prudden, M.D. Fifth edition. Illustrated by 365 wood engravings; printed in black and colors. New York: Wm. Wood & Co.

In the preface to the fifth edition of their work, the authors reiterate the statement that it has been their intention to give to students and practitioners of medicine the knowledge necessary for the making of autopsies, the preservation of tissues, and their preparation for microscopic study, and to outline the methods of study of pathogenic micro-organisms; and, to describe concisely, with such illustrations as seem necessary, the lesions of the active infectious diseases, and, so far as they are known, the microorganisms concerned in their causation, the various phases of degeneration and inflammation, the character of tumors, the special lesions of different parts of the body, of the general diseases, of poisoning, and of violent death. The general plan and make-up of the book has not been changed in this last edition, and what has been said in praise of it heretofore might be said again, for more than ever does it deserve such laudation.

The section on *post-mortem* examination is, considering the small space allotted to it, very satisfactory; that devoted to general methods of preserving pathological specimens and preparing them for study is less so. When we say that no mention is made of a method of staining that is probably used by every pathologist to-day, namely, that of Mallory, we shall have made our reasons for this statement clear. The section on the blood has been rewritten by Dr. James Ewing, and it is a fairly accurate reflection of the views of those who have made their names familiar to all students of blood pathology. A beautifully executed plate lends color and value to this chapter. The chapters on inflammation have been subjected to revision, but to no very great change. That on animal parasites is practically unchanged, and we miss mention, either by word or picture, of the *anchylostoma duodenale*, which for a time it was believed, was found only in certain parts of Europe and the Orient, but which it is now absolutely certain occurs in this country. The chapter on vegetable parasites is a most commendable one.

The authors frequently adopt an attitude of reserve toward many questions on which other equally gifted pathologists are frequently dogmatic. We may cite, for instance, the statement that "it seems probable from what we know at present that several forms of bacteria are capable of causing acute cerebrospinal meningitis." To us, if we understand that reference is made to the epidemic form, this seems highly improbable, and the more carefully the evidence at hand is subjected to critical examination the more does it appear that the *diplococcus intracellularis meningitidis* is the real cause of the disease when it prevails epidemically.

The section devoted to the diseases of the nervous system is the least satisfactory one in the book. Many diseases on which the student and the practitioner need very much light, such as the primary systemic diseases of the spinal cord, simple and combined, are not mentioned, and we are very doubtful that it is of the least service to endeavor to convey to the student's mind the essential pathological features of amyotrophic lateral sclerosis by saying that "degenerative changes of both the central motor neurons from the brain to the cord, and of the peripheral motor neurons from the motor cells of the cord to the muscles, may be diseased, and these conditions determine a replacement fibrous hyperplasia in the lateral column, and also in the anterior cornua of the spinal cord." This condition has been called "amyotrophic lateral sclerosis," even though this be accompanied by a picture. Quite as much as this may be obtained from the study of any good dictionary. Such important subjects as progressive spinal muscular atrophy and bulbar paralysis, are given three lines, while malformations of the cord are given as many pages. We are glad to turn from the nervous system to the respiratory and vascular systems. Here the authors write with a clearness and certainty that comes from long familiarity with the subject and from positive convictions.

The reputation which previous editions of this work made for its authors will be enhanced by the present one. The mechanical part of the volume is very satisfactory.

Atlas und Grundrics der Verhandlehre. Von Dr. Albert Haffa, Privatdocent für Chirurgie an der Universität Würzburg. München: J. Lehman, 1897.

The author of this handbook of bandaging is well known as an orthopedic writer of prominence. The text of this work does not differ much from similar works, except in its completeness and in the beauty of its illustrations. These are all copies of photographs and enhance the value of the book immensely, while they elucidate the text much better than photographs usually do. As a thorough exposition of the art of bandaging, the book may be heartily recommended.

Report of the Commissioner of Education for the Year 1894–95. Vol. i, part i. Washington: Government Printing Office, 1896.

This report contains a large amount of statistical and other information concerning primary and higher education in the United States and Europe, with a special report on the higher education of women, and on the Chautauqua Assembly. The student of pedagogy will find in this volume a fund of information.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

ECTOPIC GESTATION.[1]

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AFTER putting the outline of an intended paper on ectopic gestation together, I began to look over the literature on the subject, and then came to the conclusion that, after the many masterly contributions which have already appeared, I could not add any valuable new material. Therefore, I shall take up your time only with the conclusions which I have derived from my personal experience, in a series of nearly one hundred cases of ectopic gestation, seen in my practice.

The causes of ectopic gestation are by no means definitely settled. Undoubtedly, in a great majority of instances, some form of inflammatory disease of the pelvic organs acts as a predisposing factor. I have formerly asserted that in every instance a tubal inflammation is present, usually a catarrhal salpingitis; but during the past few years I have met with several cases in which nothing of an inflammatory nature could be attributed as the cause, and, consequently, I have been compelled to accept the view, put forth by experimental investigation, that, in some instances at least, the etiological factor is that the spermatozoa pass directly into the Fallopian tube, and then meet the ova, and an imbedding takes place, though the tube be in normal condition. If the Fallopian tube be inflamed, even though to a slight degree, or if distorted, as the result of inflammation, or if there is a neoplasm in it, it is readily conceivable that the impregnated ovum remains in the tube; yet, as said before, I feel convinced that there are exceptional instances in which no such pathologic condition exists; therefore my acceptance of the theory mentioned.

The internal migration theory does not seem plausible to me, because the immediate increase in size of the ovum, when it comes in contact with the spermatozoa in the uterine cavity, would seem to me to make it highly improbable that the product should migrate back into the tubal canal. The attachment may take place in any part between the ovary and the uterus, or in either of these organs.

For the diagnosis of an ovarian pregnancy it is necessary that the respective Fallopian tube be intact and in normal condition, except for its increase in size and the circulatory changes necessarily accompanying such enlargement. The gestation sac must be amidst normal ovarian tissue, and distinctly separate from the tube. Of this variety I have not seen any case, although they do exist beyond doubt.

The variety called intramural by Hennig is probably the next in rarity. It is a slight variation of the interstitial variety in degree only, the interstitial being that form developed in the uterine portion of the tube. In the intramural form, the conception product buries itself in the adjoining muscular structure of the uterus.

I have seen one instance of this variety. On December 13, 1883, I was called to see Lena D., twenty-two years old, who had been married about three years, and presumed herself pregnant for the first time, it having been more than two months since her last menstruation, and, besides, she had had several other symptoms of pregnancy, such as morning sickness and shooting pains through the breast. While dressing her hair she was attacked with an intense, sudden pain in the lower abdomen, so severe as to cause her to fall. This was followed by collapse. The pains continued severe, with slight intermissions, for several hours. Death occurred on December 17th, from peritonitis. On autopsy, the rupture was found to have taken place on the posterior surface of the corpus uteri, near the tubal junction. The abdomen was filled with blood of about the date corresponding to the first day of the attack, showing that had an operation been performed after the subsidence of the collapse, the patient, perhaps, would have been saved.

That a true, primarily abdominal pregnancy exists, is doubtful to many, and I confess to belong to the latter class, believing that primarily the gestation is of the tubal or tubo-abdominal variety. The nearest approach to what may be called abdominal pregnancy in my experience is illustrated by the following case, which was classified under that heading and published in the *American Journal of Obstetrics* in 1880 by the late Professor Montrose A. Pallen:

> In November, 1879, I saw a woman, twenty-three years old, the mother of two children, the last being born in August, 1875. At the time of my call on her, which was for the purpose of attending her in confinement, she presumed herself to be then in labor. She gave a history

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[1] Read before the Obstetrical Section of the New York Academy of Medicine, February 25, 1897.

of having suffered from inguinal pains for three months, but for the past two days to these pains had been added intense labor-like pains, of such severity that she expected to be delivered at any moment, although she considered herself but six months pregnant. The examination showed what seemed to be the vertex tightly wedged in the cul-de-sac of Douglas, with the vaginal portion of the cervix crowded up behind the symphysis. In the hypogastrium a round, smooth, and elastic tumor was felt, which was considered to be the breech. My attempts to correct the supposed malposition being useless, I called in several gentlemen in consultation, and all agreed with me as to the continuance of the treatment pursued, and also in the diagnosis. I presumed that I was dealing with a gravid retroflexed uterus, and endeavored to correct the malposition.

Professor Pallen operated with the intention of doing a Cæsarean section, when it was found that the condition was an abdominal gestation. The position of the child was as diagnosed previously. The sac containing the fetus was apparently independent of the tubes or broad ligaments, yet no *post-mortem* being obtained (death of the patient having taken place on the morning following the operation) we are not in a position to say anything positive as to the primary seat of the gestation, and whether it was tubo-abdominal and later developing into true abdominal or otherwise. Dr. Pallen, at the time when he reported the case, stated that he extracted a dead fetus. This statement should be corrected, for the fetus lived several minutes after extraction.

The most common variety of ectopic gestation is the tubal, which may of course occur in any section of the canal. In one instance I have operated twice on the same patient for tubal pregnancy, with an intermission of five months. The first time the left tube, and next the right, was the seat of trouble.

Termination.—It is but seldom that ectopic gestation will go on to full term. Usually it is interrupted between the second and eighth week; more frequently before the tenth week than later; but by no means is it the case, as supposed by some, that a rupture of the tube is a necessary termination. In my own experience tubal abortion is nearly as frequent. In some instances death of the embryo occurs and the products of conception become innocuous and are absorbed. Again, it may occur in interstitial or tubo-uterine pregnancy; that it is changed into true uterine pregnancy the following example, which I add to those already known, bears out this statement, which is so strongly opposed by Mr. Tait:

February 18, 1886, Mrs. M., thirty-three years old, married eleven years, four children, all normal deliveries. Two and one-half years had elapsed since the last confinement. Since the 3d of the month she had suffered with pain in the right hypogastrium, which radiated over the entire abdomen and down the right thigh. The pain was nearly constant, and was described as being cramp-like in character. The uterus was somewhat diminished in consistency, and slightly enlarged. On the right side it was considerably thickened and painful on bimanual examination. The enlargement was distinctly felt to pass a trifle outside of the uterine boundary into the tube. On February 22d a sound was passed into the uterus which was found to be empty. On that day a faradic current was used as strong as the patient could comfortably bear it, the positive pole being placed over the tubo-uterine tumor with the intention of destroying the vitality of the ovum, inasmuch as I had determined satisfactorily to myself that we were dealing with a tubo-uterine pregnancy. I find four such treatments recorded in my notes. At the time of the intended fifth treatment all the pains had disappeared and with it the enlargement of the right side of the uterus and tube. The patient was eventually delivered of a living child at full term by myself.

This case seems to me to be quite conclusive of the possibility of a termination such as that mentioned above.

An ectopic gestation may advance to full term and a living child may be obtained, but such is indeed a rare exception, and one that we have no right to expect. In other cases the fluid contents are absorbed and a lithopedion results, as in the case demonstrated at the meeting of the American Gynecological Society by Dr. Lusk. I have in my practice seen only one instance in which the pregnancy had gone to full term, and in this case suppuration of the sac and maceration of the fetus ensued, so that the patient was septic at the time of operation. In some such cases the sac may rupture into the bowel or bladder and recovery finally take place after a serious and long illness, the contents gradually being expelled through the rupture. Of such a termination I have also seen one instance.

Rupture may occur into the folds of the broad ligament, and with cessation of the bleeding, the products of conception with the extravasated blood may be absorbed; or, in some cases, we may have the formation of a retro-uterine hematocele, if the bleeding process is slow and pelvic inflammation is present, which aids in the encapsulating of the blood, and this, too, may then be absorbed. Such a process I believe is more apt to be present in cases of tubal abortion when the fimbriated extremity of the tube is attached to the pelvic floor.

Diagnosis.—Before the beginning of an abortion or rupture I consider the diagnosis to be a very difficult matter in the early stages, unless there has been an opportunity to make a number of observations of the case, because it is seldom that patients consult us until the onset of the symptoms. One reason why the specialist so seldom has the opportunity to see cases of unruptured or unaborted tubal gestation is that the patients seldom have much cause for complaint before the beginning of the usual termination and so do not think it necessary to consult a physician, but if they do consult the family physician, he usually does not recognize the condition as being sufficiently serious to call a specialist in consultation. It is, therefore, of the utmost importance that the general practitioner should be sufficiently acquainted with these abnormal conditions and that he be on the alert so that he may be able to make the diagnosis. After the beginning of such a catastrophe the diagnosis should not be difficult. I have but one instance to record in which the diagnosis was not made, and since then an opportunity has been afforded me sixty-two times to operate for ectopic gestation, in which it was corroborated in each instance. *The sixty-two cases resulted in fifty-eight recoveries and four deaths.* The characteristic features are the cessation of the normal menstrual period for a greater or lesser period of time (usually from a few days to five or six weeks); the occurrence of intermittent cramp-like pains in the lower abdomen, notably beginning on the affected side and then radiating over the entire lower abdomen; a discharge of thick, dirty chocolate-colored sanguineous fluid, in variable amounts, which adheres to the examining finger (the irregular bleeding usually is indicative of the death of the embryo); the uterus enlarged and of the consistency of a uterus affected with chronic hyperplasia; to the side of the uterus a mass, intimately adherent to the organ, in many instances traceable into the retro-uterine space. The mass has no definite outline, varies in size, and is of a hard consistency, but not as firm as ordinary inflammatory exudate, feeling somewhat similar to a pyosalpinx surrounded by perimetritic products. In nearly all cases the breasts contain colostrum. The discharge of a decidua adds to the certainty of the diagnosis, but I must confess that despite the stress placed by most writers on this last objective symptom, I have found it absent in many of my cases, so that I do not place very much significance upon its absence. The blood later on changes to a bright red in spots, in some instances, and in others again, it assumes the bright red color after three or four days' time. The presence of anemia, more or less marked, is prominent in all cases according to the amount of blood effused into the peritoneal cavity.

I have not been able from my experience to lay down any rules enabling one to differentiate tubal abortion from tubal rupture. Those which have been placed before the profession do not bear out my experience.

From these characteristic symptoms many variations occur under different circumstances. I have, for instance, seen one case in consultation in which the only symptom, in addition to the hyperplastic condition of the uterus, was the sudden occurrence of extreme weakness and marked anemia. Upon these two conditions the probable diagnosis was principally based. There was a suspicious feeling in the cul-de-sac of Douglas as though free fluid were present, but it was by no means prominent enough to enable one to say with certainty that such was the case. It was found upon abdominal section that the right Fallopian tube, which was the seat of an extensive rupture, was held high up in the pelvis by old inflammatory bands.

In the later stages of pregnancy the diagnosis becomes much easier. Here the size of the tumor, its gradual growth, and other more marked symptoms of pregnancy all aid one to make a correct diagnosis. I have purposely refrained from speaking of pregnancy in a bicornate uterus, because I have had no personal experience with the condition.

Treatment.—I believe that the advocates of electrical treatment in such cases are rapidly diminishing in number. We should consider an ectopic gestation in the same light as a malignant neoplasm. There is no doubt in my mind that electricity, especially the galvanic current, has been used with advantage, as one can see from the careful treatise on this subject by A. Brothers in the *American Journal of Obstetrics*, yet at the same time it is in my opinion more dangerous than is operative interference in the hands of an experienced surgeon. The death of the embryo does not preclude either the danger of hemorrhage or the danger of decomposition of the sac contents. As to the injection of narcotics into the sac, as practised by Von Winckel and some others, the danger is the same as far as suppuration is concerned, yet in a locality where it is impossible to procure an experienced operator either one of these methods is safer for the patient than operation, and should be advised.

In early ectopic pregnancy the operative plan is understood by all, and I do not think any one is at variance as to technic if the abdominal route is chosen.

One error frequently committed is that the patient on account of unfavorable surroundings is transported to a hospital for operation when she is suffering from a ruptured tubal gestation. This is a very serious mistake, as such patients often do not bear the removal, or during the transport have another and perhaps fatal intraperitoneal hemorrhage. Hence, I have usually considered it wisest to operate upon such a patient at her own home, despite bad surroundings, because the surgical work can be done just as aseptically and thorough, although the inconvenience to the operator is tenfold. The after-treatment under these circumstances is surrounded by numerous and serious difficulties, especially if a drainage tube is left in the abdomen. This objection does not hold good with me, because I do not use a drainage tube. If the adhesions are so numerous that they cause considerable bleeding when separated, an intraperitoneal gauze packing is employed according to the method of Miculicz, and the subsequent absorbent-cotton dressing on the abdomen is sufficient to protect the wound under all circumstances. As to the other after-treatment, it can be carried out satisfactorily, so far as my experience goes in probably more than 300 abdominal sections performed under these so-called unfavorable surroundings. My idea is to stop the bleeding in such a patient wherever the patient may be.

Again, I have not found it necessary to wash out the abdomen and to remove all of the blood in the careful manner usually advised. Formerly I practised this, but latterly have not, and I have come to the conclusion that on account of the blood being rapidly absorbed by the peritoneum, it is more to the interest of the patient to shorten the operation, than to lose twenty minutes or more upon an exceedingly careful toilet of the peritoneal cavity. This, of course, only holds good for such cases as those we have under consideration.

I do not care to operate when the patient is in a condition of extreme shock, or better say, collapse, because under such circumstances the patients do not bear an operation of such magnitude well, and usually it is possible to rally them to a better condition when there is at least a fair heart action, if the cases are properly treated. As soon as this has been achieved no time should be lost and false hopes entertained, but the operation should be performed as rapidly as possible, for, with the extremities bandaged and with proper stimulation, everything for the operation being in readiness, the bleeding tube can soon be tied off, with a favorable chance of recovery of the patient.

In unruptured ectopic, or if rupture has taken place and the uterus is freely movable, I consider that the vaginal operation should have the preference. To Dührssen belongs the credit of having first performed and published it, but without the knowledge of his work and before his publication, I also performed vaginal celiotomy for ectopic gestation and presented the specimen before the New York Obstetrical Society. I would not, however, recommend that the operation be performed from below indiscriminately.

In advanced ectopic gestation, it was formerly customary to leave the placenta *in situ* and to sew the sac wall to the abdominal wall, packing with gauze and irrigating the cavity. This is a method which should not be used unless the adhesions are so dense that it is absolutely impossible to separate them. If possible, the entire sac should be enucleated. If suppuration has taken place, however, the old procedure is safest.

The form of treatment of pelvic hematocele due to ruptured extra-uterine pregnancy has two sets of advocates. I was surprised, when a paper was announced on a "new treatment" for this condition, to find that it was one which I thought was practised by everyone, but I was still more surprised when, in the discussion which followed its reading, there was a variance of opinion as to the treatment of the condition from below or above. It, therefore, seems evident that no unanimity of opinion exists, so far as the treatment is concerned. In some cases the blood will gradually become absorbed; in other cases, however, the pressure effects are so great that something must be done; and, again, in other cases, suppuration necessitates interference. If the exudate is small, and does not give rise to any alarming symptoms, it is sufficient to command absolute rest and apply an ice-bag over the abdomen; if some pain is present, however, my patients have usually demanded more active interference. After the requisite preparation of the patient, operator, etc., I use a Palmer uterine dilator, the dull ends of which have been ground down to a sharp point. This makes the point of puncture not much larger than that of an ordinary exploring needle. It is pushed into the most prominent part of the hematocele, and the blades are spread. Between them the blades of a Bischoff's rectal dilator are placed and the opening stretched to any desirable extent. I have repeatedly made the opening large enough to introduce my hand into it, if the patient had a large and relaxed vagina, and in these cases was able to explore the entire interior of the sac. After washing out the cavity, it is filled with either iodoform, sterilized or sublimate gauze. The latter is left *in situ* for two or three days, and an ice-bag is applied over the abdomen, and thereafter the dressing is changed every two or three days, or even every day, according to indications, and the cavity allowed to close down gradually. In one instance I had a serious hemórrhage from the point of puncture, but this occurred in April, 1886, when I used a pair of scissors with which to both puncture and dilate. Since then I have had no serious mishap, although in 1889 I had a case in which there was continuous bleeding from a torn vaginal vessel, lasting more than two days. Dr. Von Ramdohr assisted me in this case, and it required considerable search before the vessel was found and sutured. I am not satisfied with the making of a small aperture in these cases, because such openings close too rapidly, making the subsequent dressings too painful. The important point is that the opening should not be made with a cutting instrument, but with one which will gradually stretch the vaginal puncture. The healing process I have found to take from two to eight weeks, according to size of cavity.

A NEW, PRACTICAL DISINFECTANT MATERIAL.

By CHAS. T. McCLINTOCK, M.D.,
OF DETROIT, MICH.

SEVERAL years ago[1] I published the results of some studies on the germicidal value of corrosive sublimate. Geppert, Abbott, and others had shown that sublimate was not as powerful a germ destroyer as most persons supposed. My experiments showed that, exceptionally at least, germs grew after exposure to sublimate solutions as follows: Staphylococcus pyogenes aureus in sublimate 1–1000, twenty-three hours; staphylococcus pyogenes aureus in sublimate 1–100, eleven hours; staphylococcus pyogenes aureus in sublimate, saturated, one hour; bacillus subtilis in sublimate 1–1000, forty-one hours; bacillus subtilis in sublimate, saturated, eighty-five minutes; swine-plague in sublimate 1–200, one hour; typhoid germs in sublimate 1–1000, one hour; germs in feces in sublimate 1–1000, twenty-four hours; germs in feces in sublimate, saturated, twenty-four hours.

I said, furthermore: "However, the proof that sublimate is not a good germicide is no proof that it may not be valuable as a disinfectant. If my interpretation of its action be correct, it follows that a germ treated with sublimate, and possibly with solutions more dilute than 1 to 1000, unless, perchance, it gets into the blood or is exposed to very exceptional conditions, is powerless to grow; that is to say, it is probable that a spore of subtilis or anthrax treated with sublimate 1 to 1000, and then thrown on the soil or into water, will not germinate, owing to the fact that the capsule of sublimate surrounding it is not removed." I pointed out the mistake of the earlier experimenters in concluding that the germs were dead because there was no growth on culture media. I then gave the following probable explanation of the failure of sublimate to kill the germs, although apparently doing so: "Many germs have a gelatinous envelope, often seen in old cultures. The sublimate chemically unites with and coagulates this envelope, and so shuts itself out from the germ cell. There is probably an exact similarity here to the case where spores survive for months in absolute alcohol. Absolute alcohol is immediately fatal to protoplasm, and the only explanation we can offer for the facts is that the alcohol does not reach the interior of the germ cell. Now, if these germs after treatment with sublimate are transferred to gelatin, agar, etc., they do not grow, although many of them at least may still be living. If by appropriate means the sublimate coagulum surrounding the germ is removed, it will grow (provided the exposure to sublimate has not been too long)."

Believing that the failure of sublimate as a germicide was chiefly due to the fact that it coagulated albumens, I undertook some experiments to determine if this coagulation could be avoided and the solution be made to retain the poisoning power of the mercury salt. It is well known that alkalies tend to dissolve albumens and to prevent their coagulation either by heat or chemicals, but the most valuable germicides of the mercury salts, the biniodid and bichlorid, are precipitated and rendered inert by the alkalies. It then occurred to me that in a double salt of mercury and some other metal it might be possible to find a compound that would not give up its mercury to a weak alkali. I tried many combinations with mercuric chlorid, but in vain. I did find with one of the sulphites a combination that worked satisfactorily when freshly made, but on standing in the air the sulphite was changed and the mercury precipitated by the alkali. Turning to the iodids, I was more successful. For example, a solution of the double salt of mercury and potassium iodid will permit the presence of a weak alkali without precipitation of the mercury. In such a solution albumens are dissolved; further, nickel and steel are protected by the alkali from the action of the mercury. This seemed to be what I was looking for, as it was a germicide more active than mercuric chlorid or iodid that would not tarnish instruments. But, after making hundreds, even thousands, of experiments with the material, it was not satisfactory. The trouble seemed to be in the amount of alkali needed: if too much was used, the mercury was precipitated; if too little, the metals were attacked. If the correct amount was employed at the outset, some of it might be used up, uniting with albumens, for example, in disinfecting the skin.

I next took advantage of the well-known fact that when neutral soaps are dissolved in water they are gradually decomposed into acid soaps and free alkali. By combining my mercury salt with the soap, when this was dissolved, I got a gradually increasing amount of alkali, sufficient to replace any used up by albuminous or other bodies present in the field of experiment. But some soaps, I found, liberated the alkali too rapidly, others too slowly. The amount of alkali and the rate of liberation depend in part on the nature of the oil from which the soap is made; also, to some extent, upon the amount of glycerin, free alkali, fatty acids, unsaponified fat adulteration, etc. After a long series of experiments to obtain the right kind of soap, the proper amount of the mercury salts, etc., I obtained a combination that appears to be fairly satisfactory. At first I used a soap containing one-half per cent. of mercuric iodid; but, by varying the composition of the soap, I found I could use one per cent., and later on two per cent., of the mercury salt. I give here the results of a few of the experiments made with this material; also, some experiments made at the same time with other disinfectants. A word as to the method used in making the tests. The germs used were anthrax spores, typhoid, cholera, diphtheria, and staphylococcus pyogenes aureus. Most of the experiments were with the common pus germ, staphylococcus pyogenes aureus, as this is the organism against which our attempts at disinfection are usually made. Several different recently-isolated cultures of this germ were used. In some series of experiments, in order to avoid the danger of carrying along on the platinum wire sufficient of the disinfectant to act as an antiseptic in the culture medium, I proceeded as follows: The germs were placed for a given time in the solutions to be tested, then one or more loops were removed to a tube containing five cubic centimeters of sterile water, to which had been added two or three drops of ammonium sulphid. In this method, introduced by Geppert, any of the disinfectant carried along in the drop of fluid clinging to the platinum loop is precipitated. From this second tube two loops were then transferred to a third tube of bouillon or, in some of the experiments, melted gelatin. If after some days in the incubator the tubes showed no growth, they were then inoculated from the original culture used in the experiments, in order to show whether germs would grow.

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[1] "Corrosive Sublimate as a Germicide," MEDICAL NEWS, October 1 and 8, 1892.

In some of the series mere dilutions were used, the germs after being in the disinfectant being transferred to a tube of bouillon, and from this tube a second one was inoculated.

TABLES.

1-PER-CENT.-ANTISEPTIC-SOAP SOLUTION, CONTAINING 1–5000 MERCURIC IODID.

Germ.	1 Min.	5 Min.	15 Min.	30 Min.	60 Min.
S. p. aureus	0	0	0	0	0
Cholera	0	0	0	0	0
Typhoid	0	0	0	0	0
Diphtheria	0	0	0	0	0

MERCURIC CHLORID, 1–5000.

Germ.	1 Min.	5 Min.	15 Min.	30 Min.	60 Min.
Cholera	0	0	0	0	0
S. p. aureus	+[1]	+	0	+	0

MERCURIC CHLORID, 1–1000.

Germ.	1 Min.	5 Min.	15 Min.	30 Min.	60 Min.
S. p. aureus........	+	0	0	0	0

MERCURIC IODID, 1–5000.

Germ.	1 Min.	5 Min.	15 Min.	30 Min.	60 Min.
S. p. aureus........	+	+	+	0	0

MERCURIC IODID, + 0.6 PER CENT. SODIUM HYDRATE; SOLUTION, 1–5000.

Germ.	1 Min.	5 Min.	15 Min.	30 Min.	60 Min.
S. p. aureus........	+	+	0	0	0

CARBOLIC ACID, 1–20.

Germ.	1 Min.	5 Min.	15 Min.	30 Min.	60 Min.
S. p. aureus........	+	0	0	0	0

0.2 PER CENT. ANTISEPTIC SOAP; 1–25,000 MERCURIC IODID.

Germ.	1 Min.	5 Min.	15 Min.	30 Min.	60 Min.
Pus	+	+	0	0	0

MERCURIC IODID, 1–1000, + 0.06 PER CENT. SODIUM HYDRATE.

Germ.	1 Min.	5 Min.	15 Min.	30 Min.	60 Min.
Pus	+	+	+	0	0

MERCURIC CHLORID, 1–1000.

Germ.	1 Min.	5 Min.	15 Min.	30 Min.	60 Min.
Pus...............	0	0	0	0	0

MERCURIC IODID, + 1.2 PER CENT. SODIUM BICARBONATE; SOLUTION, 1–5000.

Germ.	1 Min.	5 Min.	15 Min.	30 Min.	60 Min.
S. p. aureus........	0	+	0	0	0

ANTISEPTIC SOAP, ¼ PER CENT., CONTAINING MERCURIC IODID, 1–20,000.

Germ.	1 Min.	5 Min.	15 Min.	30 Min.	60 Min.
S. p. aureus........	0	0	0	0	0

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[1] + Means growth.

ANTISEPTIC SOAP, 1 PER CENT.; MERCURIC IODID, 1–5000.

Germ.	1 Min.	5 Min.	15 Min.	30 Min.	60 Min.
S. p. aureus........	+	0	0	0	0

ANTISEPTIC SOAP; MERCURIC IODID, 1–2000.

Germ.	1 Min.	5 Min.	15 Min.	30 Min.	60 Min.
Anthrax spores.....	0	0	0	0	0

The antiseptic soap was tested after it had been exposed two months to sunlight. The results were as good as with the fresh material. While, in the above tables the results are not entirely uniform (as would be expected by any one familiar with the testing of disinfectants), it will be seen that in but a single case (this is true for the thousands of experiments as well as for the examples shown above) did any one of the germs tested—typhoid, diphtheria, cholera, aureus, and anthrax—survive one minute when the solution was as strong as one per cent.

There are a number of antiseptic soaps offered for sale. I have examined several. Most of them are merely soap to which a certain amount of corrosive sublimate has been added. Any tyro in chemistry ought to know that this is an incompatible mixture. As soon as the soap is dissolved it begins to break up into free alkali and acid soap, and the alkali will at once precipitate the mercuric chlorid. Certain of the antiseptic soaps are combinations of the phenols, thymol, etc. I have tested most of the soaps of this character now on the market. Tested against the pus germ, staphylococcus pyogenes aureus, these gave, even in five-per-cent. solutions, growths up to 15 minutes, or as long as tested.

As said before, this soap does not attack nickeled or steel instruments under any ordinary exposure. They may be boiled in a strong solution of it without harm. If left in the soap solution for some days, however, the instruments may rust. For the past six months I have used this soap exclusively for shaving and disinfecting the site of injection and operation in a number of horses used in the production of antitoxin. During that time the percentage of abscesses and suppurating wounds has been less than one-half of what it was when mercuric chlorid and carbolic acid were used. The razors used have never shown the least effect from the mercury salt. It seems to me that the material should be of value to the surgeon, and particularly useful to the gynecologist and obstetrician, as it will serve both as a disinfectant and lubricant for hands and instruments. As a general disinfectant for physicians' use after visiting cases of infectious diseases, after examining cases of gonorrhea, syphilis, tuberculosis, etc., it should have a place. Several specialists are testing it in skin diseases, and it may be of service, owing to its power of dissolving albumens and because it is so penetrating, where mercuric chlorid would coagulate and shut itself out. I have used it in one case of gonorrhea as an injection with apparent success. Only a few detailed experiments are given in the tables, although I have made some thousands with this material. I have also asked several friends of mine, working bacteriologists, to test the material. Their results are substantially the same as mine.

In testing this soap, one may be misled as follows: A loop is transferred from the soap solution that has been inoculated with the germ. This is placed in bouillon or gelatin. After some hours the medium becomes cloudy and looks as if it contained a vigorous growth of germs. But this is a deception. The cloudiness simulating a germ-growth is due to the decomposition of the soap and a partial precipitation of the same by the sodium chlorid present in bouillon. An inoculation from this tube into a second will settle the question.

Conclusions.—(1) In proportion to the amount of antiseptic contained, this soap is at least five times as strong as any known germicide. A one-per-cent. solution of the soap, 1–500, of mercuric iodid, is at least equal to 1–1000 mercuric chlorid. (2) As it would ordinarily be used, it is at least as strong as any germicide in common use; *i.e.*, I believe that if a wet cake be rubbed over the hands, the layer of soap next the skin will be at least a one-per-cent. solution, and, as the tables show, this is at least as strong as 1–1000 mercuric chlorid. (3) It does not coagulate albumens or attack nickeled or steel instruments. It does not seem to have any action on lead, and so will not injure waste pipes. (4) It will attack silver and aluminum instruments.

HYDROTHERAPY IN TYPHOID FEVER.[1]

By FRANK H. DANIELS, M.D.,
OF NEW YORK.

The use of water externally is one of the oldest therapeutic measures of which we have a record in medicine. Not wishing to go deeply into ancient history, let me simply say that Hippocrates laid down rules for the use of this agent in both acute and chronic disease. Later it was used extensively in Rome; and even the Emperor Augustus bears testimony to its advantages in his own person. For a time it fell into disrepute or rather, to use a famous expression, into innocuous desuetude, only to be resurrected by Floyer, an Englishman, in 1697. Since then it has had its champions and opponents in all parts of the world, until to-day it is universally recognized by those who are acquainted with its scientific use as one of our most potent agents in the treatment of all forms of disease.

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[1] Read before the Harvard Med. Soc., of New York, March 27, 1897.

Currie, a century ago, spoke of its great value in all acute fevers, and his work was translated into several foreign languages. Priessnitz, the Silesian peasant, early in this century popularized the treatment, and his name has now become closely associated with hydrotherapeutic procedures. It remained for Brand of Stettin, however, in his work which appeared in 1861, to put hydrotherapy, as far as typhoid fever is concerned, on a proper scientific basis. He claimed that full baths at a temperature varying from 80° to 65° F., would reduce the mortality of typhoid fever to a lower point than any other known method of treatment; and, further, that if the baths were resorted to early enough, and carried out properly, every case ought to be saved.

In order to fully appreciate the value of this method of treatment, let us first consider the effect of cold water upon the human body when applied externally. The first effect of immersion makes itself felt on the peripheral circulation, and the terminal nerve filaments in the skin. Under the stimulus of the cold the cutaneous blood-vessels contract, and this is followed later by relaxation. This naturally forces the blood into the other organs of the body and helps thereby to restore the tone of the general circulation. The shock to the terminal nerve filaments is conveyed to the central nervous system and thence reflected to various parts of the body. The effect on respiration is to cause at first a gasping followed by a deep inspiration. These spasmodic efforts soon give way to a normal but deepened rhythm. The stimulating effect on the heart is shown by Winternitz's experiments. He found that cold applied to the surface at first increases the pulse-rate, which is immediately followed by a diminution. The urine is increased in quantity and its specific gravity lowered.

To the direct stimulation of the central nervous system and the heightened tone of the circulation, is attributed the beneficial effects of the cold baths on the nervous symptoms in typhoid fever. Whereas, the blood has been circulating sluggishly in dilated, inelastic vessels, it is now forced through vessels which have recovered their tone, and it is enabled to reach all parts of the body. The deepened respiration allows more oxygen to be taken up by the blood, and the result must be an enriching of the blood supply to the detriment of the toxins circulating therein. No such beneficial effect would be obtained if the cold baths were given without continued friction to the surface of the body. The relaxation following the original contraction of the blood-vessels, due to the sudden contact with cold water, would then remain constant, and the result would be depressing instead of stimulating to the general circulation. The friction employed is a constant irritation, both to the peripheral cirulation and the terminal nerve filaments in the skin; and by this means we accomplish the advantage claimed for this method of treatment.

Flint says in the fifth edition of his "Practice of Medicine": "It must be admitted that the known resources of therapeutics do not afford reliable means for the arrest of typhoid fever, nor even for shortening the duration of the febrile career. In the present state of our knowledge the most important object of treatment with reference not to arrest or abridgment of duration, but to severity and danger to life, is the reduction of the body heat. There is ground for the belief that in typhoid and other fevers, where there is continued hyperpyrexia, the severity and danger to life are due directly in a greater or less degree to the increased heat of the body." If this statement of Flint were correct, the Brand treatment of typhoid fever would have no reason for existence, as none of its supporters claim that it has any marked influence upon the body temperature. They would acknowledge the truth of his first statement, namely, that we have as yet no reliable means for its arrest or even for shortening the duration of its febrile career. But the claim is made and substantiated, I believe, that this treatment enables the patient to bear the continued high temperature without danger or bad result.

The real danger in typhoid fever results from the presence of the poison which circulates in the blood and which, without doubt, gives rise to the peculiar complex of symptoms recognized and known as the typhoid state. This comprises the symptoms due to some profound influence exerted principally upon the nervous system. The low muttering delirium, the deafness, dry tongue, tympanites, diarrhea, rapid pulse, and wakefulness, are all symptoms which one thinks of immediately when the word typhoid is mentioned; and any treatment that will relieve these symptoms when present, or will prevent them from appearing, must be recognized as a distinct advance on the methods hitherto employed. It is not claimed that the duration of the disease is shortened, and it is doubtful if complications are avoided, though in my opinion some of the latter certainly are. As a method of treatment, I do not think that it is an ideal one, for it does not reach the cause of the disease, nor does it attempt to do so; but, until we have a method which will have the same effect on the direct cause of the disease that quinin has on the *plasmodium malariæ*, it will remain as the most satisfactory form of treatment. To be sure, in private practice it gives rise to a great deal of trouble and expense. A suitable portable bathtub must be procured, and two intelligent nurses must be in attendance to carry out the treatment properly. This is one great objection in cases occurring in families of moderate means, living in small apartments, and such cases ought to be treated in hospitals, particularly if the patient is a heavy adult.

Especial attention must be given to the cardinal points of the treatment: These are, first, early institution of the baths; second, the water should be at a temperature of 65° to 70° F.; third, constant friction in the shape of rubbing must be employed while the patient is in the bath; fourth, the baths should be of fifteen-minutes' duration and repeated once in three hours as long as the temperature reaches 103° F. by the rectum, or as long as the so-called typhoid symptoms continue, even if the temperature is lower. Of these, the third rule, *i.e.*, the continued rubbing while in the bath, is the most important. If these cardinal points are carefully adhered to, no bad results will follow; on the contrary, the patient will feel a sense of quiet and comfort after the baths which no drug can give. A complaint of chilliness on the part of the patient is not enough to warrant his removal from the bath before the expiration of the fifteen minutes. If this chilliness, however, is accompanied by continued chattering of the teeth, or by cyanosis of the face or lips, it is better to remove him at once. An accelerated pulse is also a danger signal, but a small pulse is not. It is best to precede each bath by a dose of whisky or brandy, half an ounce being an average dose. The shivering is lessened if this is given ten or fifteen minutes before each bath, so that it can be absorbed and have some effect on the peripheral circulation. I know of but two contra-indications to the use of these baths—severe intestinal hemorrhage and perforation of the bowels, in both of which complications quiet is of the utmost importance. Pregnancy and menstruation are not injuriously affected by the baths. I will show you later the chart of a female patient, seven months pregnant, who was treated in this way and who gave birth to a child at term. It has seemed to me that relapses, mild in character, are more common after bathing, but a longer experience with this method may result in a modification of this belief. Complications are certainly less severe.

I will not weary you with statistics as to the results of the different methods of treatment, but will cite a few only. Delafield found a mortality of 24.66 per cent. out of a total of 1305 cases treated in New York hospitals during the years 1878–1883. The German Hospital, Philadelphia, reports 64 cases treated from February 1 to November 4, 1890, by the Brand method without death. Brand himself published the following statistics in the *Deutsche Medicinische Wochenschrift* during 1887: Jürgensen of Tübingen treated 217 cases, with one death; Vogl of Munich, 221 cases, 6 deaths; Military Hospital, Stralsund, 1877–1882, 257 cases, 1 death; Military Hospital, Stettin, 186 cases, 3 deaths; Brand, private practice, 342 cases, 1 death; a total of 1223 cases, with but 12 deaths, a mortality of 1 per cent. Brand's own results were amazing, only one death among 342 patients treated. Not one of these twelve deaths occurred in a patient that came under treatment during the first five days of the disease. And this is a point on which Brand lays great stress, namely, the early institution of the baths. Most of our hospital patients do not come under treatment until they have been several days ill, and even amongst our private patients it is not so easy to make a diagnosis at that early period in all cases. The statistics quoted above are mainly from military hospitals, where the patients are under proper supervision from the beginning. Still, not even their results can equal those of Brand in his private practice, in which only one patient out of 342 was lost.

It has been claimed that in true typhoid the temperature drops but little after a Brand bath, while in other acute diseases there is a greater drop. This has even been mentioned as a possible diagnostic point, but I have not been able to satisfy myself that this observation is well founded. Now that we have the Widal or blood-serum test for typhoid fever, we are not dependent on any other method of diagnosis, provided the reaction takes place early enough in the disease to be of value. The Brand treatment really needs some such method of positive diagnosis as this promises to be; for it has been proved beyond doubt that it is of the utmost importance to begin the treatment as soon as possible after the patient falls into our hands in order to accomplish the best results.

How slight the change in temperature may be after the Brand baths is well shown by a patient treated during my service last autumn at the J. Hood Wright Memorial Hospital. During seven days fifty baths were given, and there was an actual rise of temperature after each. It is our invariable custom to take the rectal temperature of our patients just before the bath, immediately after, and again half an hour later. In this way we are enabled to observe quite accurately the influence of the baths upon the body temperature. In the case of another patient, however, who died on the sixth day after admission (the fifteenth day of the disease), the drop in temperature after the baths was most marked, varying from 2.8° to 4°. This case was complicated by pneumonia. Another patient, who was seven months pregnant, received twenty-six baths. She eventually recovered and was delivered at term. The fetal heart-beats were counted daily and varied from 180 per minute, when the disease was at its height, to 140 when the patient left the hospital. One of our nurses, twenty years old, contracted the disease, undoubtedly in the wards, and died from an attack of bronchopneumonia during the sixth week. She came of a tuberculous family, was herself extremely anemic, and an examination of her blood showed only thirty-five per cent. of hemoglobin. She received ninety-five baths in all, given over a period of seventeen days. The symptoms attributable to the typhoid infection were subsiding, when the bronchopneumonia invasion took place; and although her temperature for the first ten days of treatment varied from 104° to 106° F. in the rectum, she was quite comfortable, and did not become delirious until the beginning of the bronchopneumonia.

The last case I will cite is that of a patient whom I have no doubt whatever was saved by the application of the Brand baths and cold affusions to the head and shoulders. He was twenty-seven years old, unmarried, and lived in a boarding-house. I first saw him October 20, 1896, when he had an attack of *grippe*. In four days his temperature became normal and he said that he felt perfectly well. Nine days later he appeared at my office with a mouth temperature of 104° F. and a pulse of 120, when a diagnosis of typhoid fever was made. Forty-eight hours earlier he had taken a long ride on his bicycle. For eleven days he was treated at home, but he grew constantly worse in spite of all that I could do for him. I had advised his early removal to the hospital so that he might be bathed; but objections were made by a relative. It was impossible on account of the expense to bathe him at home, as two male nurses would have been necessary. The day before he went to the hospital his condition was as follows (and I might say it was only because his condition was so desperate that his friends gave their consent to his removal): Temperature by the rectum, 105° F.; pulse 150, weak and irregular. Facies drawn, skin suffused, tongue dry, and abdomen distended and tender. He had diarrhea, with involuntary evacuations, subsultus tendinum was most marked, and delirium was active at times, but continually muttering. On admission to the hospital he was immediately given Brand baths and cold affusions. He eventually recovered. This case shows better than any other I could present the advantages of this method of treatment. Begun as it was late in the course of the disease, *i.e.*, at the end of the second or the beginning of the third week, it still was efficacious. I am convinced that early bathing here would have warded off these nervous symptoms, and the entire course of the disease would have been less severe. His temperature was at no time after admission to the hospital very high, but the patient was certainly thoroughly infected with the typhoid poison. The cold affusions were used at a temperature of 65° F., and on the second day his mental condition was better. Six days later his tongue was moist, there was but little subsultus tendinum, the abdominal distension had disappeared, his bowels had to be moved by injections, and he was passing sixty-one ounces of urine in twenty-four hours. From that time on the case was similar to one of ordinary typhoid, but later the patient developed an abscess over the sacrum which retarded his convalescence somewhat, and which was doubtless due to an infected bedsore, which originated before he entered the hospital.

CLINICAL LECTURE.

TRICUSPID REGURGITATION; SENILE GANGRENE; THE DIAGNOSIS OF TYPHOID FEVER BY THE AGGLUTINATION TEST.[1]

BY H. A. HARE, M.D.,
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PROFESSOR OF THERAPEUTICS IN THE JEFFERSON MEDICAL COLLEGE.

THE first patient that I show you is, as you notice, somewhat cyanotic. His respirations are a little more labored than is normal, and he sits up in bed rather than reclines. His chest is deep and well developed, his neck is that of a powerful man, and his face shows that he has been much exposed to the weather. When we examine his lips a little more closely, we notice that in them the dusky color of his face becomes more marked. His finger nails are also blue and livid. On closer inspection we find, also, that the jugular vein, particularly that upon the right side, is pulsating, and that this pulsation occurs with the systole of the heart, which indicates that the right ventricle as it contracts not only forces blood into the pulmonary artery, as it should do, but that regurgitation takes place into the right auricle, and from there into the right jugular vein. In examining the jugular vein in any case of heart disease to determine whether or not pulsation is present, you must always be careful to avoid mistaking a transmitted impulse from the carotid artery to the tissues in the neighborhood of the vein for true jugular pulsation. In this case, however, the pulsation is so marked that there can be no doubt as to its causation. The symptoms which the patient presents are chiefly those of cardiac dyspnea, and we naturally proceed immediately to an examination of his heart for the purpose of determining positively what the cause of his distress may be. On listening to the apex, the spot to which we always first direct our attention in studying lesions of the heart, I hear a murmur, systolic in point of time, or in other words, occurring with the first sound of the heart, and this murmur is of a peculiar metallic sound and rather short and sharp. However, when I listen over the aortic cartilage I hear this murmur even more clearly than I did at the apex, and therefore the first impression might be that this is a case of aortic rather than mitral disease, particularly if it is borne in mind that a murmur is usually loudest at its point of origin. But the jugular pulsation makes me suspect that the man has something else than aortic disease, and that the only reason I hear the murmur loudest over the aortic area is because I have approached nearer to its seat of origin, namely, the tricuspid valve. When I place my stethoscope over the fourth interspace on the right side, I hear the murmur more clearly and more definitely than before. Indeed, it seems as if the murmur was transmitted directly to my ear from its point of origin. It is evident, therefore, from the symptoms and from the location and character of this murmur that the patient is suffering from tricuspid regurgitation. This becomes still more certain when I find that the murmur is clearly transmitted to the back upon the right side. I can also see that there is marked pulsation in the hepatic area, and, as you know, true hepatic pulsation is never present except in cases of tricuspid regurgitation. It must be remembered, however, that in some cases when the heart is acting powerfully and the liver is somewhat enlarged, and particularly if the heart is displaced somewhat to the right, the ordinary cardiac impulse may be transmitted to the liver. In order to exclude such a possibility in this case, I place one hand under the floating ribs anteriorly and the other hand over the same ribs at the side, and doing so I find marked expansile pulsation of the organ. An entirely different sensation is imparted to my hands from that which would occur if the liver were simply jarred by a transmitted cardiac impulse.

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[1] A Lecture delivered at the Jefferson Medical College Hospital, February 8, 1897.

One of the most annoying symptoms from which this patient suffers is excessive cough, and, on listening to his chest, particularly at the base on both sides, posteriorly, I find a large number of moist râles, which are due to the fact that the pulmonary circulation is impaired, owing to the failure of the tricuspid valve, and as a result he has a certain amount of stasis or congestion of the lungs. At first glance it would appear that the first thing to do for the relief of the patient is to administer some narcotic or sedative that will allay to a great extent this excessive cough. It renders his condition most pitiable as it gravely interferes with respiration and circulation, and during his coughing attacks he becomes very cyanotic and oppressed, the jugular veins swelling to such a degree that it seems as though they would burst. Although we are tempted for these reasons to administer such drugs, we are forced to bear in mind, on the other hand, that these remedies, by stopping the cough, may prevent the patient from expelling from his lungs the mucus which gradually accumulates in them, and under these circumstances he would rapidly drown in his own secretions.

When he entered the wards his breathing was far more labored and the action of his heart was irregular and feeble. If I had given him digitalis in the presence of an arterial pressure already somewhat high, I would have stimulated the heart, but at the same time increased the labor of this organ by increasing the arterial pressure. I ordered for him instead of digitalis, strophanthus tincture in 5-drop doses and $\frac{1}{100}$ of a grain of nitroglycerin three times a day, and he is greatly relieved.

You must understand that the condition of tricuspid regurgitation is a comparatively rare condition, and many of you may pass through a lifetime of practice without meeting with a case. When you do meet with one it will usually be secondary to disease of the mitral orifice or to the presence of emphysema or some other process in the lung which interferes with the transmission of the blood from the right to the left side of the heart. This obstruction results in dilatation of the right ventricle and failure of proper approximation of the tricuspid leaflets and consequent regurgitation. Very much more rarely will the condition of tricuspid regurgitation be primary, as it is in this instance, for rheumatism rarely involves these valves primarily, and in this patient we have sought in vain for any history of rheumatism, or strain, or for other cause which could have resulted in the development of the lesion.

The second case that I show you is also one of tricuspid regurgitation, which is, however, apparently secondary to a mitral regurgitation, and which is almost as interesting as the one we have just examined. In this case the murmur is not so loud, there is no pulsation of the liver, the jugular veins are not markedly distended, and the condition of the patient is moderately comfortable.

The third case is one of senile gangrene. The patient was admitted to the wards about four weeks ago with dry gangrene involving the little toe of the left foot, a distinct line of demarcation having formed just where the toe joins the body of the foot. At this time his pulse was exceedingly feeble, and an examination of his blood vessels showed them to be markedly atheromatous. His nutrition was fairly good for an old man of sixty-three, and aside from his inability to walk, and some paroxysms of severe pain in his leg about four inches above the ankle, he was otherwise in good condition. There were no abnormal heart sounds.

It was evident that we had to deal with a case of senile gangrene, because of the atheromatous blood vessels and feeble pulse, and for the reason that an examination of the urine by the resident physician failed to demonstrate the presence of albumin or sugar. In this connection the case is also of interest as illustrating the necessity of frequently examining the urine when the diagnosis is obscure, for, about ten days later, an examination revealed sugar, and another quantitative examination made a few days later revealed it again in small amounts. It is only proper for me to mention the fact that the man had no other symptoms of diabetes than glycosuria, which of itself is not, of course; absolutely pathognomonic. He had no thirst, no excessive hunger, no itching, and no boils. The disease gradually progressed, notwithstanding stimulant treatment, but his pain markedly decreased. His third toe next gradually became gangrenous, and forty-eight hours ago, in the course of twelve hours, the entire foot, with extraordinary rapidity, became gangrenous almost to the ankle, the rapid process being a moist gangrene, in contrast to the dry or shriveling gangrene which first developed. Simultaneously with this sudden increase in the local disease the patient's temperature rose to 104½° F., and he speedily became partially comatose, answering when sharply spoken to, but sinking into slumber before he had finished his reply to the question. A few hours later, as it was seen that his coma was deepening, I decided to perform upon him what the French physicians have recently been so enthusiastic about, namely, intravenous washing of the blood, which consists in introducing a canula into a vein of the arm, and injecting very gently through it, by means of a fountain syringe, a normal saline solution, which is supposed to wash the blood of poisons and cause their elimination by the kidneys. Shortly before performing this operation I found that the patient's arm when raised remained in the position in which it was placed, or, in other words, he had developed a spastic rigidity of the muscles, and while the injection was being given he had a tonic convulsion, in which his respirations rose to sixty a minute, and were slightly Cheyne-Stokes in character. His pulse became almost extinguished, although during the early stages of the injection it was remarkably strong and full. The convulsion soon ceased, and in the course of half an hour the patient had a very profuse sweat, which saturated the bedclothing. On leaving him for the night I informed his wife and children that I did not expect him to survive more than an hour or two, but to my great surprise yesterday morning I found him quite conscious, encouraged about himself, and fairly bright. The fever had disappeared, but the gangrenous process was rapidly extending up the leg, and his feeble pulse and irregularly acting heart told me that the end was not far off.

The fourth case is of peculiar interest, not only because of the difficulties in its diagnosis, but because a comparatively new method of diagnosis has decided what the condition of the patient is. She is nineteen years of age, a light mulatto, who has a long history of general debility and anemia. A little over two weeks ago she had an attack of dizziness followed by fever, these symptoms being preceded for a number of days by general wretchedness. Her temperature has at times risen as high as 104° F., and has been controlled by either bathing or sponging, usually the latter. She has been obstinately constipated from the first, and her stools have had nothing characteristic of typhoid fever about them. There have been no spots on the abdomen, and I have not found any considerable enlargement of the liver or spleen. There has been only a moderate amount of tympanites and the tongue has not at any time been distinctly typical of typhoid. The fact that she seemed to be in a typhoid state, however, rather pointed to the presence of enteric fever. An examination of her abdomen shows it to be but slightly tumified, the skin being perhaps a little more dusky than is natural. What is more important is the fact that the skin here is rough and appears like *cutis anserina*, a condition which I have often noticed in cases of tuberculous peritonitis, although it is of course in no way characteristic.

With the idea that it might be a case of tuberculous peritonitis, in which case an operation would be demanded, I asked Dr. Keen to see the case in consultation with me and we decided in view of its uncertainty that we had better wait until other symptoms developed, as there did not seem to be the fluid present in the abdominal cavity that is usually found in many cases of this disease. The decision as to the character of the case was determined, however, by what is known as Widal's agglutination or clumping test, which rests upon the fact that the bacilli of Eberth, which, as you know, are the characteristic micro-organisms of typhoid fever, cease their movement and become agglutinated or "clumped" when brought into contact with the blood serum of typhoid fever patients. I asked Dr. J. C. Da Costa, Jr., one of the assistants in the medical clinic, to make this test for me, and he reported that agglutination took place in less than a minute. We have decided, therefore, in view of this test, that the patient is suffering from enteric fever and not from tuberculosis. That this test is reliable is proved not only by the reports of Wyatt Johnson of Montreal, and Greene of Minneapolis, but by numerous other clinical observations both in this country and abroad. It is interesting to note, however, that in one instance both Professor Coplin and Dr. Da Costa have seen this agglutination result in the case of a patient who was not suffering from any symptoms of typhoid fever but who had a double aortic murmur. This may have been due to the fact that the patient at some comparatively recent period had recovered from typhoid fever and therefore gave the reaction.

CLINICAL MEMORANDA.

A CASE OF TUBO-ABDOMINAL PREGNANCY, WITH DELIVERY OF A LIVING FETUS AT THE SEVENTH MONTH.[1]

By EDWARD A. AYERS, M.D.,
OF NEW YORK;
PROFESSOR OF OBSTETRICS AT THE NEW YORK POLYCLINIC;
VISITING PHYSICIAN TO THE MOTHERS' AND BABIES' HOSPITAL.

MRS. G. R. was referred to me by her physician, Dr. Thomas D. Pinckney of Williamsbridge, N. Y., who gave the following history of the case: The patient was married fifteen years ago, having a child normally a year later. A second child was born a year afterward, following which the mother suffered from peritonitis and was confined to bed for three months. Her lochial discharge continued for ten weeks. She menstruated every three weeks after getting up, and did not become pregnant again until seven years had elapsed. She then had an instrumental abortion performed when she believed herself five weeks pregnant. Considerable hemorrhage ensued, but no special reaction of an inflammatory character seems to have occurred. Menstruation began in three weeks. About five years later she again became pregnant and a second abortion was accomplished at five weeks gestation. The last abortion was followed by fever, pain, and the expulsion of "pieces of flesh." The flow ceased in two weeks. The patient said that she never felt well afterward. She had "an uncomfortable feeling in the lower part of the abdomen, chiefly on the left side." This was in February, 1896. Menstruation returned and was normal in character. During April her menstrual flow was very scanty, but it continued for eighteen days. The discharge was brown, "like coffee stain." She had a slight flow May 1st. During that month she began having sharp, cutting pains in the left lower part of the abdomen, which were sometimes followed by fainting spells and always by great exhaustion. The pain, though more dull in character, continued until August. She felt life August 13th. She had been growing larger, with a feeling of tightness in the abdomen when on her feet.

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[1] Read before the Obstetrical Section of the New York Academy of Medicine.

I first saw the patient in consultation with Dr. Pinckney, on Saturday, October 31, 1896. She was pale, emaciated, and the face wore an anxious expression. She had had morphin at times for a considerable period, and the mouth and tongue were dry. She was suffering severe pain, due to the fetal movements. Dr. Pinckney had heard the fetal heart, to the right of the umbilicus, some time before.

The patient was removed to the Mothers' and Babies' Hospital that afternoon. After free catharsis had been obtained, I made an examination under chloroform. The abdomen appeared enlarged to the size of a five or six-months' pregnancy. There was some slight bulging in the left lower quadrant, and along the right middle and upper quadrants. The fetus was clearly mapped out as lying in a line parallel with the maternal vertebræ, and with its dorsum to the right, the entire body being chiefly in the right half of the abdomen. The head was not outlined, the position being determined by the location of the limbs, back, and fetal heart. The fetus did not feel nearer to my fingers than in many normal cases of pregnancy I have examined. The left lower quadrant of the abdomen held a mass that could not clearly be made out. It was neither elastic, cystic, boggy, or firm. While it might be placenta, I could not affirm it. There was no vascular murmur to be heard in or about it. The cervix was soft, spongy, enlarged, and patulous up to the internal os. In connection with the anterior lower segment of the uterus, which felt soft and somewhat elastic, it suggested a pregnant uterus of about five months. The fundus could not be outlined, for reasons shown when the abdomen was opened.

Being able to exclude an intra-uterine pregnancy, the history pointing most emphatically to an extra-uterine gestation, I determined to follow a conservative course, and on November 7th, dilated the cervix, having decided that in any case it was not just to the patient to permit the pregnancy to continue. The uterine cavity was found to be small in extent, and was lined with a soft and easily detached membrane. This was removed and the cavity lightly packed with iodoform gauze. The abdomen was then opened, Dr. J. A. Bodine kindly assisting me, in connection with the hospital staff, and the placenta was found just under the omentum, covering most of the space below the umbilical line, and somewhat to the left. The fetal surface of the placenta lay immediately beneath the abdominal wall, the cord arising from the middle of its upper surface. A layer of blood coagulum covered most of the abdominal contents in front. This was of recent origin, with older clots of a liver-like character lying between the uterus, placenta, and intestines. The head of the fetus lay just behind the fundus. Delivery was accomplished without difficulty, the left shoulder, and then the head and body being born. Under Dr. Mitchell's skilful handling good resuscitation was secured.

The child was lying outside the amnion. The placenta was extremely convex, almost balloon-shaped, with, as I have said, the fetal surface lying uppermost. False membranes bound it on all sides, uniting it to the anterior wall and fundus of the uterus on the right, to the colon posteriorly, and to the peritoneum on the left and lower anterior part. Its vascular supply came from the left Fallopian tube, apparently from the outer half, the pregnancy evidently having started in this tube. Aside from being bound down like a balloon held to the earth, the placenta was quite free above and could be considerably displaced. The hemorrhage caused by its removal was not very great. It weighed one pound, three ounces. The cord was about eighteen inches long. Iodoform gauze was packed in the left lower pelvis and the wound closed up to the gauze. The abdominal operation lasted three-quarters of an hour. The patient suffered severe shock, due chiefly to the great vital depression resulting from her prolonged sufferings. Hot saline injections were retained, and the next morning her condition seemed favorable, but at eleven o'clock she succumbed from general exhaustion.

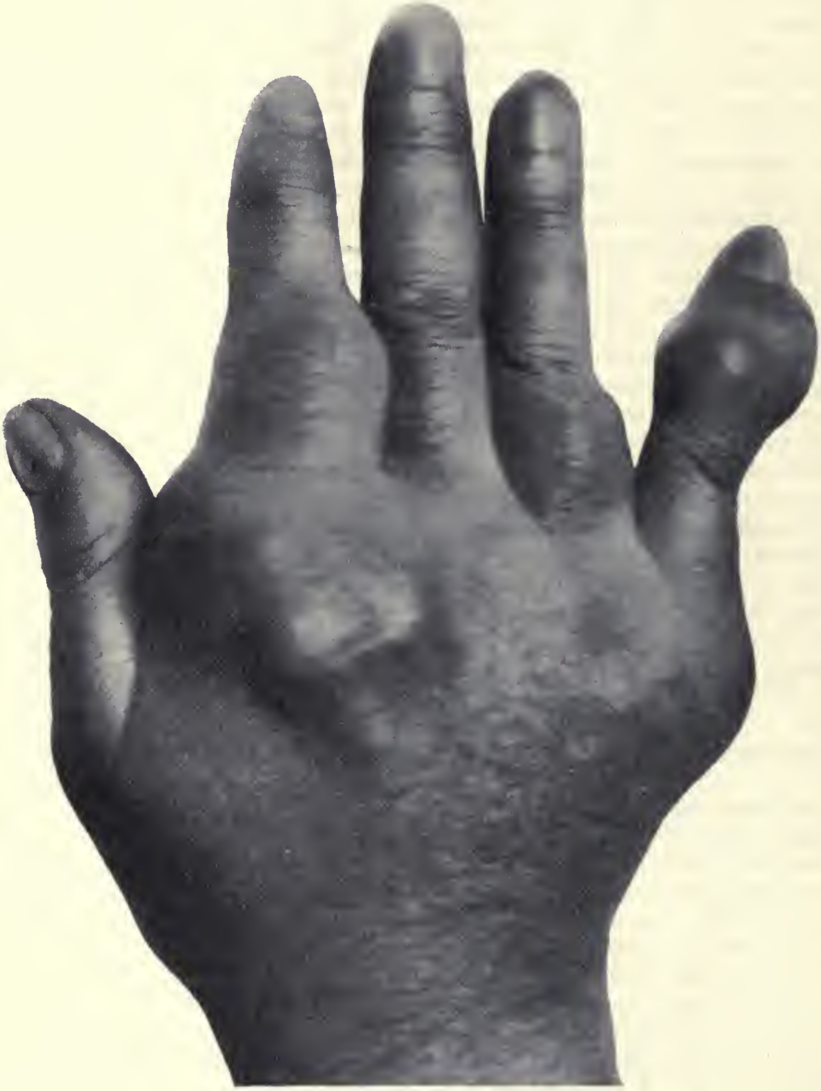
The uterus was removed *post-mortem*. Its limitations could not be made out by abdominal palpation previous to operation, as it was covered by placenta. Its weight was 11½ ounces; length, 5⅜ inches, and width, 3½ inches. The thickness of the wall through the middle plane was 1 inch, the diameter of the cavity from the external os, 4⅖ inches; the circumference of the body, 9½ inches, and the diameter of the cervix, 1⅝ inches. The placenta was nearly spherical and was 6¾ inches in diameter, 1⅝ inches thick in its thickest part, and weighed 1⅖ pounds when the blood had been removed.

The membrane which lined the uterine cavity was lightly attached to the body wall. I have examined sections of it under the microscope, and it proves to be distinctly decidual, though possessing some of the appearances of chronic endometritis, to the extent that there are still remnants of utricular glands, rather a diminution in number, while the columnar epithelia have lost their normal regularity of shape and arrangement, being desquamated, disintegrated, or supplanted by connective-tissue corpuscles. Large areas of the membrane were composed entirely of characteristic decidual cells, normal in structure and arrangement.

I wish to call attention here to a paper published by me in 1892, on "The Decidua in the Diagnosis of Extra-uterine Pregnancy."[1] The conclusions arrived at from my investigations were: In extra-uterine pregnancy the endometrium generally changes to decidua; decidual tissue is pathognomonic of pregnancy; portions of the endometrium may be obtained with the curette, examined with the microscope, and decidual tissue recognized if present; such tissue may be a remnant of an abortion, a part of the decidua surrounding an ovum, or due to an extra-uterine pregnancy; the use of the microscope in connection with the clinical history will determine to which variety the specimen belongs, and if to the third, will confirm the presence of an extra-uterine gestation.

That this last conclusion, if true, is of very great importance in connection with the diagnosis of uterine abnormalities, cannot be denied. The history of extra-uterine gestations is one of brilliant diagnoses and operations much mixed with false diagnoses or no diagnoses. The statements made in my paper are gradually receiving the approval of investigators. Webster of Edinburg practically incorporates my arguments in his excellent work on "Ectopic Pregnancy," published in 1895, adding at the end: "Ayers has carefully considered this subject, and is of the opinion which I have given above, *viz.*, that decidual cells are alone due to the influence of pregnancy." Strahan, in his work on "Extra-uterine Pregnancy," which won the Jenks prize, says: "The lining mucous membrane also undergoes development into a true decidua. Indeed, it has been suggested by an authority that we should dilate the cervix and ascertain the presence or absence of the decidua as a crucial

FIG. 1.



Photograph of right hand of patient suffering from gout. (Fisk.)

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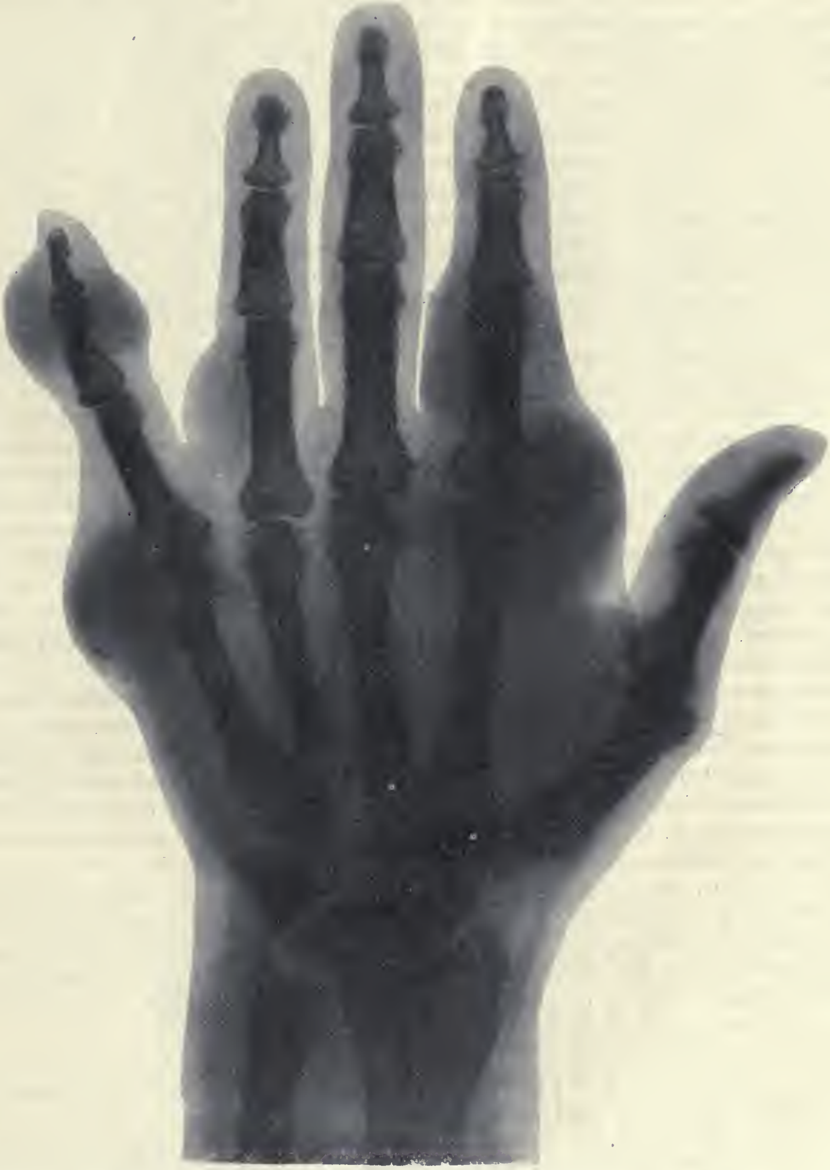
[1] *Amer. Jour. of Obstet.*, vol. xxvi, No. 3, 1892.

test as to the existence of extra-uterine pregnancy. The hint might possibly prove useful, as in case it turned out to be a normal pregnancy the worst that could result would be an abortion." As this publication shortly antedates my own, the author evidently does not refer to my work, and it would therefore seem that I was not the first to propose the plan. I do not know, however, to whom he refers. It is satisfying, at any rate, that the procedure is approved of.

In the majority of cases in which an extra-uterine pregnancy is suspected a laparotomy will be indicated. When there is doubt as to the correctness of the diagnosis of either intra- or extra-uterine pregnancy I think a curettement for the purpose of substantiating the diagnosis is justifiable, even if, in the former case, it subjects the patient to the possibility of an abortion. According to Toth (*Arch. für Gyn.*, Bd. iv., H. 2) rupture of the tubal sac in extra-uterine pregnancy occurs in 70.3 per cent. of all cases, mostly during the first three months of gestation. Schauta puts the mortality in non-operated cases as 68.8 per cent., and in operated cases as 23.4 per cent. The dangers from the production of abortion in normal pregnancies, brought about in the effort to make a diagnosis of suspected extra-uterine pregnancy, are slight, and in any event should not weigh against the terrible liabilities that lie in the path of overlooked extra-uterine gestations.

Curettement in cases of extra-uterine disease or preg-

Fig. 2.



Skiagraph of the same hand represented in Fig. 1, showing deposits of urate of sodium in the tissues contiguous to the articulations. (Fisk.)

nancy is liable to precipitate accidents. The *American Journal of Obstetrics* for November, 1896, reports Hofmeier and Löhlein as having observed the formation of an hematocele following curettement, which in some cases proved fatal. Hammerschlag reports a case followed by abscess of the parametrium. In preparing for a curettement of this sort, therefore, we should likewise prepare for a laparotomy, which, as in my case, could be performed at the same sitting. In the majority of cases a microscopic examination of the endometrium will not be necessary to one who is familiar with the various appearances of the lining uterine membrane.

I had hoped when I began this report to be able to present the infant alive. It lived three weeks, and after improving in appearance, losing to some extent the wrinkled, little-old-woman skin, and gaining some few ounces in weight, began to lose its nursing ability, and died from inanition. At the time of its delivery it showed the effects of lying in a surrounding medium that, while soft, was not like the amniotic fluid of a normal pregnancy. From the appearance of the placenta the fetus must have been without an amniotic covering for many weeks, as the amnion was everted, turned down, and adherent to the uterus, intestines, and peritoneum, the fetus lying amongst the intestines along the right side of the abdomen. The left foot was bent inward, resembling a talipes varus. The head, which lay between the fundus uteri and the promontory of the sacrum, was pressed somewhat out of shape, so that the parietal bones were flattened. Both these abnormal outlines largely disappeared before the child died. Its weight at birth was three pounds, four ounces.

It is interesting to note the peculiar arrangement of the circulation in the placenta. While attached on its base to a considerable surface of peritoneum, it did not draw its vascular supply from this surface, but from several vessels of from one-sixteenth to one-eighth of an inch caliber, which came from the Fallopian tube, and from a thick band of adventitious tissue, the origin of which, I think, was also from the left tube. Instead, therefore, of the chorionic villi, which were destined to form placenta at the site of the serotina pressing down against the degenerating decidua, that they might spread out over a broad base, as in a normal intrauterine development, and from which they might gain an extensive maternal surface for contact with the maternal blood, they were fed in this case by the direct entrance of large vessels into their villous ramifications. I think it can be safely said that the placenta, aside from the vessels entering the chorion, was entirely fetal in structure, which is a condition not ordinarily occurring in even tubo-abdominal pregnancy. By reason of this fact, namely, that the vascular supply arose from a few vessels, instead of from a general vascularized surface, the ordinary grave difficulty in abdominal pregnancy of removing the placenta without dangerous hemorrhage did not prevail. Even the ordinary firmness of adhesion did not exist; the placenta was easily separated, with the exception of some strong bands of adventitious tissue, the peritoneum being left therefore in a favorable condition for recovery.

PHOTOGRAPH AND SKIAGRAPH OF A GOUTY HAND.[1]

BY A. L. FISK, M.D.,
OF NEW YORK.

R. F., male, aged forty-six, was referred to my class in surgery from the medical class at the New York Hospital in December last, to obtain, if possible, some surgical relief. He is a natural born American, as were both his parents. For many years his father suffered exceedingly with rheumatism. The man's occupation, so long as it was possible for him to follow it, was that of peddling oil from a wagon throughout the rural districts. He has always been in the habit of drinking freely of the malt liquors, but never of spirits. His first attack of gout was during the winter of 1876–77, in the great toe of the left foot; later in the same season a second attack occurred in the great toe of the right foot. Three years afterward, in 1880, both knees were affected; and, in the autumn of 1882, both wrists and hands were the seat of the disease. This attack was so severe that he was confined to his bed for four months. The gouty deposits in the hands appeared first in the left, which now is completely crippled, the fingers being bound down in the palm. The photograph and skiagraph, which were taken early in February last, show the condition of the right hand. The skiagraph demonstrates the fact, most perfectly, that the deposit of salts has occurred entirely in the tissues surrounding the bones and the joints, and not in them. This furnishes a means of differential diagnosis between gout and arthritis deformans.

MEDICAL PROGRESS.

Operation in Lumbar Fractures.—ENDERLEN (*Deut. Zeitschr. für Chir.*, Bd. xliii, p. 329) treated a case of fracture of the sixth dorsal and first lumbar vertebræ with anesthesia and paralysis of the sphincter. Six months after the accident the patient died of phthisis. Transverse sections of various parts of the column revealed slight damage to the fifth and sixth dorsal vertebræ, as well as a considerable fracture of the first lumbar vertebra, the body of which had penetrated the spinal cord to the depth of four millimeters. The microscopic examination of the cord in this situation revealed an almost complete transverse injury, and above this an ascending degeneration.

Making use of this case in connection with the many cases of fracture of the spinal column in the lumbar region, recorded in medical literature, the author does not favor operative interference unless there is present a comminuted fracture or complicated fracture of the arch of the vertebræ, or where there is evidence of the penetration of the bone-fragments. Where these complications are not present it is an extremely difficult matter to make a differential diagnosis between simple concussion and trauma. In both instances early operation is contraindicated. Not even for the evacuation of a blood clot exerting pressure on the cord is an operation advisable. Experience proves that even after the lapse of three months from the reception of an injury an almost complete rehabilitation is by no means a rarity. In one case recovery has been established even after the considerable lapse of 2½ years. In cases where operation has been followed by good results, it remains doubtful whether the merit is due to the operation or the *vis medicatrix naturæ.*

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[1] Read before the Harvard Med. Soc. of New York, March 27, 1897.

The cord can tolerate a certain degree of pressure, but there are also authentic cases in which, after removal of callus masses and fragments of bone, to the pressure of which the cord has been a long time subjected, recovery has resulted. Even in these latter cases early operative interference is not advisable and three weeks, at least, should be allowed to elapse before resorting to surgical measures. As regards the seat of fracture, numerous autopsies establish that the body of the vertebra is the seat of injury in ninety-five per cent. of the cases. Of the cases operated on, fractures of the arch have been found to exist almost as frequently as those of the body of the vertebra, from which the writer concludes that fractures of the body are always to be considered as of serious import, while fractures of the arch offer more tangible points of vantage to successful surgical manipulation.

The Cause of Death after Extensive Burns.—AJELLO and PARASCANDOLO (*Gazz. degli ospedali e delle clin.*, 1896, No. 83) conclude after elaborate investigations that the cause of death after burns is a toxic ptomain, and is not due to the toxins which may be produced in the burn by bacteria, nor to anatomic changes which the blood-corpuscles or the organs of the burned area may have undergone. They found that if the same portions of the body be excised and then burned that the injections of the fluids derived from them killed healthy animals, with the same symptoms as were exhibited by animals dying from the effects of their own burns. If the burned portions of an animal were quickly removed it exhibited none of the specific symptoms of burning and death therefrom. These symptoms were also avoided by thorough blood-letting, followed by immediate transfusion of healthy blood or artificial serum.

The Fate of Epithelial Masses Experimentally Introduced into the Circulation.—During the Congress of Italian Surgeons held in Rome in October last, SGAMBATI (*Centralbl. für Chirurgie*, No. 51, 1896) read a paper on this subject. Proceeding on the supposition that metastases in carcinoma are developed from little masses of the tumor carried along in the blood or lymph circulation, he attempted to reproduce these symptoms artificially, in order to see whether normal epithelium would lodge and grow in the same way as the abnormal cancer cells. For this purpose he selected the submaxilary gland and the testicle of dogs, preserved the integrity of their epithelium in a warm normal salt solution, and introduced little masses of the tissue into the veins of dogs. After a certain time the dogs were killed and the hemorrhagic infarcts in their lungs were examined microscopically. In most cases the embolic tissues were found to be more or less degenerated. In a single case, in which the dog was killed on the fourteenth day, there was a multiplication of the testicular epithelium which formed the embolus, presenting the appearance of a tubular adenoma. The thrombus in which it lay only partially obstructed the vessel lumen, and to this favorable situation the author was inclined to attribute the cell-growth. In the case of ordinary cancerous metastases, where only a few cells are swept away at a time, the nutritive conditions would be equally or even more favorable.

Limitation of Rotation after Fracture of the Forearm.—From a study of eighty-two cases of fracture of the forearm MINTZ (*Centralbl. für Chirurgie*, No. 52, 1896) concludes that resulting limitation of rotation may be due to: 1. Changes in the soft parts (ligamentous or muscular). 2. Changes in the bone. The latter are of three kinds:

(*a*) Hypertrophic callous. (1) Union between radius and ulna. (2) Pseudarthrosis. (3) Lateral splinters of bone or masses of callous. (*b*) Excessive callous with dislocation of fracture ends. (*c*) Dislocation of fracture ends. (1) Exogenous form of dislocation described by Volkmann, and consisting in the bending of the radius over the ulna. (2) Endogenous, a form of dislocation described by Schmidt, and consisting in the union of the lower radius fragment in the position of pronation or the opposite.

The author makes clear the fact that fractures of the forearm must be individually studied, and not all treated alike according to a preconceived idea.

The Cause of Warts.—SCHAAL (*Arch. f. Dermatol. und Syph.*, xxv, p. 207) saw a wart develop on his own finger in eight days, at a point where a number of minute glass splinters had entered the skin, but without producing any apparent wound. The wart was treated with caustic alkali and removed entire, and the splinters of glass were found in its base. The author raises the question whether all warts do not have a similar etiology. They occur usually on exposed portions of the body and especially in children whose tender skin, and their disposition to play in the sand and dirt, give abundant opportunity for the local irritation of the papillæ by foreign bodies.

The Surgical Treatment of Perforating Typhoid Ulcer.—FINNEY (*Annals of Surgery*, March, 1897), from a study of fifty-two cases of perforating typhoid ulcer treated by operation (six of these are now reported for the first time), finds that:

1. Of all the so-called diagnostic signs most reliance is to be placed upon the development of a severe attack of abdominal pain coupled with nausea and vomiting, and a marked increase in the number of white blood-corpuscles.

2. The surgical is the only rational treatment of perforating typhoid ulcer.

3. There is no contraindication to the operation, surgically speaking, save a moribund condition of the patient.

In performing this operation three things are to be done: First, to find and close the perforation; second, to empty and cleanse the peritoneal cavity; third, to effect and maintain a thorough drainage. The most satisfactory operation is performed as follows: An oblique incision six inches long is made in the right iliac region. The cecum, which is always to be recognized by its longitudinal bands, is the guide to the ileum. From it as the starting point the coils of ileum are systematically drawn out through the abdominal wound, while one assistant wipes the intestine as it is withdrawn with gauze wrung out of a hot salt solution, and another assistant keeps it warm by means of hot towels. All of the affected intestine, even to the duodenum if necessary, should be thus treated. The whole of the peritoneal cavity should then be wiped systematically with gauze wrung out of hot salt solution, attention being directed especially to the pelvic region. Usually irrigation is unnecessary, but the intestines before they are replaced should be thoroughly irrigated and wiped dry. The worst coils should be last replaced and the sutured portion left next to the abdominal wound. Bismuth gauze should be packed around this coil and introduced into the pelvis if necessary. By this means good drainage is insured and escape of feces is provided for in case of extravasation. The abdominal wound should be tightly closed except where the drains escape, and if distension follows operation the bowels should be moved early and thoroughly by calomel in broken doses, followed by salts, and, if necessary, a high turpentine and soap-suds enema. If stimulation is necessary, more reliance is to be placed on hypodermics of strychnin, enemata of several ounces of hot, black coffee, and the transfusion into the cellular tissues under the breast of a quart or more of the normal salt solution, than on any other remedies.

A Clinical Report of the Chemical Examination of Two Hundred Cases of Human Breast-Milk.—ADRIANCE reached the following conclusions (*Archiv. of Pediatrics*, February, 1897), by an interesting series of experiments: Excessive fats are due to an excess of albuminous food, which causes vomiting, diarrhea, and loss of weight, or failure to gain at the proper rate. It may be treated by limiting the amount of nitrogenous elements in the mother's diet. Excessive proteids are due to lack of exercise. This is especially liable to occur in nervous women. It is shown by vomiting, diarrhea, with yellow or green stools, containing curds, and loss in weight, or failure to gain. By regulating the exercise of the mother the elements of the milk can be brought to the normal proportions with a consequent disappearance of the gastro-intestinal symptoms.

During the colostrum period the proteids are very apt to be in excess. This, however, usually passes off in a few days, and seldom requires treatment. Should it persist, it is best to pump the milk, and dilute it with water; or, if this be impracticable, to have a wet-nurse for the child. The influence of prematuracy is well marked; the proteids are much exaggerated, and extend over a longer period than in ordinary colostrum milk. Deterioration of human milk is marked by a reduction in the proteids and total solids, or in the proteids alone. This takes place normally in the latter months of lactation. If it occurs earlier it may be the forerunner of the cessation of lactation, or it may be improved by well-directed treatment. Unless a proper addition is made to the infant's diet, the diminution of proteids will be accompanied by malnutrition and gastro-intestinal symptoms.

Serum Test for Diagnosis of Typhoid Fever.—In the March number of the *Amer. Jour. of the Med. Sciences*, BIGGS and PARK detail the results obtained in experimentation with Widal's serum test in typhoid fever as carried on in the laboratories of the New York Health Deparment. In 108 cases in which, after the completion of the illness, a definite diagnosis of typhoid fever was clinically made, a marked immediate reaction occurred in the first test in seventy per cent. Of the nineteen cases which were examined in the first week, the percentage was nearly as high—namely, sixty-three per cent. The majority of cases which gave no reaction by the fourteenth day failed to give at any time a definite reaction. But in two instances reaction at first appeared at the middle of the fourth week, when the temperature had become nearly normal.

One case was of great interest, as proving that the blood of the typhoid patient may never throughout the whole illness have sufficient agglutinating properties to give a definite reaction in the usual dilution. This case presented the usual symptoms and course of typhoid fever, and by puncture of the spleen typhoid bacilli were obtained.

It was demonstrated that in a certain proportion of cases other than typhoid, there occurs a delayed moderate reaction in a one-to-ten dilution of serum to blood, but very rarely under such circumstances does this reaction occur within fifteen minutes.

It seems probable that a positive diagnosis may be reached in fifty per cent. of cases of typhoid fever and a probable diagnosis in half the remaining cases. While the absence of the reaction for several examinations does not exactly exclude typhoid fever, yet in doubtful epidemics where several cases can be examined the absence of reaction in all of them would clearly indicate that the epidemic was not one of typhoid. For further details the reader is referred to the original article.

THERAPEUTIC NOTE.

Causes and Treatment of Disagreeable Gustatory Sensations.—HERZFELD (*Therapeut. Monatshefte*, Jan., 1897) disputes the commonly accepted opinion that abnormal gustatory sensations are due to digestive disturbances. Aside from those cases due to affections of the teeth, pharanyx, and tonsils, he holds that the crypts in the tonsils often contain masses having a fetid odor. A simple inspection may not suffice to reveal these masses, as they may be situated behind the anterior pillar. With an instrument similar to a crochet hook their presence is easily demonstrated, and the crypts may be slit up in order to prevent a recurrence of the trouble. In other cases the source of the bad taste lies in the posterior nasal cavity, where sometimes a pouch (*bursa pharyngea*) secretes a mucopurulent liquid. In such cases a slight operation will cure the bad taste. Nasal affections, affections of the antrum of Highmore, etc., are further responsible for some of these cases. The author warns against a too hasty conclusion that because of disturbed gustatory sensations the stomach is necessarily at fault.

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SATURDAY, APRIL 17, 1897.

AN EPOCH IN MEDICAL EDUCATION IN NEW YORK.

THE announcement was recently made to the medical world that the University Medical School had legally become the Medical Department of the New York University, and had passed over all its goods and chattels and their unrestricted control to the safekeeping of the authorities of the University. Following closely upon the heels of this intelligence comes the statement that Bellevue Hospital Medical College, in response to an invitation from the University, has done the same thing. Hereafter these two friendly rivals will nestle in the bosom of a common *alma mater*, will be consolidated into one institution, and be known as the New York University Bellevue Hospital Medical College.

The students and alumni of the former institutions, which now pass out of existence, are expected to embrace each other as brothers, accept their foster mother, and be enrolled and known as alumni of the New York University. During the present year the combined enrollment of the two schools has numbered 1057 students, while the combined alumni number 11,434. There are 116 members of the two faculties. In the new arrangement they place themselves entirely under the direction of the University Council, and rely upon that body for their future selection and compensation. It is rumored that they will all place their resignations in the hands of the Council, leaving that body untrammeled in its selection of a faculty.

In this consolidation the University acquires ownership of all the property, rights, leases, and privileges of both institutions, and assumes all their obligations. The terms of the transfer are absolutely without condition.

It is impossible to estimate the importance of this action, or to conceive of the boundless possibilities it has in store for the advancement of medical education in New York City. By this arrangement there will be secured a faculty composed of two bodies of professional men, each one of which has been amply sufficient for the teaching requirements of a successful and prosperous school.

The financing of a medical school is a source of anxiety, or, at least, of constant care. The professors will now be relieved of this responsibility, and their only concern will be to see that they are provided with proper teaching facilities. This will add vastly to the *esprit de corps*, and the large number of teachers will permit of more individual, personal work. An opportunity is now afforded to banish forever the old system of didactic lectures, and introduce methods of instruction along more modern and improved lines. The duty of a college professor is no longer considered fulfilled when he has monotonously and automatically gone over a subject in the presence of three or four hundred drowsy, listless, inattentive students. The successful teacher is the one who throws such a charm about a subject as to arouse the interest and ambition of the student to pursue investigations on his own account, and then places within his hands instruments of precision, and provides methods of investigation which shall enable him to work out for himself the ultimate finalities of the subject. To educate is to draw out latent powers, not to fill up empty reservoirs.

In this unification of forces the lecture halls and work rooms will doubtless be ample for all requirements. The Loomis and Carnegie laboratories are already well equipped, and offer facilities for the most thorough training. The hospital advantages are great; the buildings are conveniently located;

and the clinical material sufficient to meet all demands.

Last, but not least, the combined alumni of these two institutions, numbering as they do over eleven thousand active physicians, scattered all over this broad land, will watch with jealous eye the progress and success of their *alma mater*, and constitute a strong arm of support. It has been for some time apparent that medical education in America has reached a point where it needs endowments to carry on the work, in accordance with the demands of modern medical requirements. Since the proprietary element is now eradicated from the University Bellevue Hospital College, it is the expectation that gifts will flow into the treasury of the New York University for the aid of its medical department. The advantages already offered, and those which will be offered in the immediate future, will tend more strongly than ever to attract students to this center of medical instruction.

The four-years' course is already established. To make this additional time profitable to the student, it must be spent in carefully directed investigations in hospital, laboratory, and clinic. These practical facilities can now be more fully than ever provided in this great medical institution of New York.

AGAIN, THE INDECENT ADVERTISEMENT.

The boy who is bad but not irretrievably wicked, will avoid the person whom he has insulted or injured, if not from cowardice, at least from a sense of shame at meeting face to face one to whom he owes an apology. We have often wished that the quack would show something of the same delicacy and would not have his advertisements bestowed upon his decent professional cousins as impartially as upon the laity whom he seeks to victimize. Yet,so far as we can judge, our doorsteps are as freely supplied with information regarding the folly of youth and the means of rejuvenation, with the hints as to how to save doctors' bills, and with the advertisement of the monthly regulator and the ladies' syringe, as any of our neighbors'. We note particularly a recent menstruation circular, which shuns the prevalent idea of internal medication as irrational, and tells how the monthly flow may be reestablished by means of injections, using, of course, a particular brand of medicated tablets. We agree in most respects with the opinions of the advertiser, especially with the conspicuous notice that such injections are very likely to produce miscarriage in case the "lady" should happen to be pregnant. Such a complication would, of course, lead the aforesaid "lady" to omit the use of a syringe. We have all noticed in practice how many girls and married women consult us because of irregular menstruation due to constitutional causes, or to getting the feet wet, or to some nervous reflex, and have often observed the rarity with which supposedly pregnant women apply for the restoration of menstruation. Therefore, we are able to appreciate the number of cases of innocent amenorrhea which our advertising cousin will relieve and, in our mind's eye, can see the young matron making an unerring diagnosis of pregnancy in the early weeks and accordingly putting away her "boon to women" until pregnancy and lactation shall have been passed. But this sort of advertising will continue until the laity will appreciate the magnitude of its evil results and support the medical profession in the attempt to bring it within legal control. We would even go so far as to suggest that the good ladies who are endeavoring to raise the age of consent till a woman has gray hairs, would find a more practical, if not an ethically superior matter for their consideration, in the indecent pamphlets and suggestive newspaper advertisements of quacks.

In this connection, we take the liberty to criticise the advertisement of a physician who is not a quack but a professional man in the best standing before the law, who is widely known as a benefactor of the race, and who is a pillar of the church which he attends. We notice this man's advertisement of a third of a column in our daily paper. At the head of the advertisement is a cut representing the angel of death fleeing from an open door, in which stands a woman pointing to a crucifix between the panels. The text alludes to the "Biblical story of the passover," and draws the moral that "The chosen people are the healthy people. Nine-tenths of the deaths among children are due to the ill-health of the mothers during the period preceding motherhood." Or, perhaps it would be more correct to say that the real moral is that women should buy the doctor's medicine "at any drug store," and should also get his book, containing plain talks on all sorts of ailments, made plainer by illustrations.

What adequate comment can be made on such a case? Here is a man whose status as a physician, as a member of society, as a support of his church, is equal to that of any reader of these words. He lives in an age when the tolerance of persons with deep religious convictions ought to be equaled by the respect shown by those who lack these convictions, for the objects and writings which the former venerate. Yet he uses the sacred writings of Jew and Christian to draw dollars to his safe, an enlightened community reads his advertisement with equanimity, a liberal church accepts his offering, and only a jealous medical profession, following antiquated precedents, is stirred to feeble protest.

ECHOES AND NEWS.

Anti-spitting Ordinances.—Rochester, N. Y., and Columbus, Ohio, have passed ordinances prohibiting expectoration in public conveyances.

Nurses to Start for Crete.—Mrs. Ormiston Chant, the social reformer, and six nurses, started from London, April 8th, for the Island of Crete.

Appointment.—Dr. Robert Abbé has been appointed to the newly created position of assistant surgeon to Roosevelt Hospital, with a seat in the Medical Board.

Contagion Conveyed by Letter.—A case of scarlet fever in the town of Clinton, Me., is believed to have originated from a letter written by a relative of the sick man in the West who had been suffering from the disease.

Medical Requirements.—An amendment to the Nebraska medical practice act, adopted by the Nebraska State Senate, requires a four-years' attendance at a medical college before a license can be granted. The present law requires three-years' attendance.

Experimental Tuberculosis in Chickens.—Mafucci has shown experimentally that tubercle bacilli inoculated into hen's eggs before incubation remained quiescent during the period of embryonic development, but caused the death of most of the chicks from tuberculosis in three weeks to 4½ months after birth.

The New York City School Inspection.—In the report for the first week of five school days of the medical inspection of schools, conducted under the direction of Dr. A. Blauvelt, the total number of children examined was 13,176. The number excluded in all was 569; 481 from the public schools, 88 from the parochial schools.

Increase of Insanity in England.—The report of the Commissioners of Lunacy to the Lord Chancellor, on insanity in England and Wales, has just been issued in England. The figures given by the commissioners show that the numbers of reported lunatics increased from 36,762 in 1859 to 96,446 in 1896, and the ratio from 18.67 to 31.38 per 10,000.

Why Fashions in Surgery Change.—Lawson Tait says that the only way an operation can be estimated justly is to ascertain its remote results. "It would matter very little if an operation had no primary mortality at all if it left the majority of its subjects maimed, halt, or insane, at the end of two years. The absence of injury in secondary results is the cause of so much change of fashion in surgery, to say nothing of medicine."

The Excursion to Moscow.—At the suggestion of the American Committee of the International Medical Congress a special tour to Moscow has been planned under the supervision of Messrs. Thos. Cook & Son. The party will leave New York July 3d, and will be divided in such a way as to enable any member of it to choose one of three itineraries, each one embracing a very satisfactory tour of Europe. A considerable reduction in ordinary rates will be secured by this arrangement.

A Municipal Laboratory for New York City.—A bill has been introduced in the State Legislature providing for a municipal laboratory in New York city, the directors to be appointed by the mayor, one to be a graduate in medicine and an expert in chemistry, and one in bacteriology; salaries to be not less than $8000, nor more than $15,000. There may be an assistant in each department at a salary of $2500. All investigations desired by the Coroners or the District Attorney shall be made free of charge.

Brooklyn Water Supply.—Health Commissioner Emory of Brooklyn has submitted to Mayor Wurster a report showing in detail the filthy condition of the sources of Brooklyn's water supply. The commissioner sounds a warning to the city authorities, and tells them that with the experience of last summer fresh in mind, they cannot afford to disregard the admonitions received from the biological and chemical experts. These, briefly, have shown that at five or more places along the watershed it is common to find bacteria which point to sewage inflow.

Speers Memorial Hospital at Dayton, Ky.—The Speers Memorial Hospital in Dayton, Ky., a city of about eight thousand inhabitants, is rapidly nearing completion, and will be one of the best-equipped institutions of the kind in the West. This institution was founded in July, 1895, by means of a fund bequeathed by the late Mrs. Elizabeth Speers, who died May 13, 1894. The fund aggregated about $100,000. The building has thirty-two rooms besides the public wards, of which there are four, two in each wing, capable of accommodating twelve patients.

Mortality in the French Navy.—At the Paris Academy of Medicine MM. Vincent and Burot recently presented some statistics of mortality in the French navy. For the five years 1891–95 out of 198,313 men there were 2253 deaths, or 11 per 1000. Tuberculosis was responsible for a quarter of this mortality, and was found to be more frequent in the navy than in the army. Malaria, dysentery, and cholera also showed a heavy death-rate, and so did accidental deaths and drowning. The mortality among the medical officers and dispensers was 19 per 1000.

Death of a Medical Centenarian.—Dr. De Bossy, of Havre, France, died there on March 24th. He was born in Paris during the Reign of Terror, April 9, 1793, and had reached the age of 104 years. He received his early education and began his medical studies in England, but finally settled in Havre, where he continued to climb steep stairs to sick rooms and minister to his patients after he had passed his century of years. He said of himself that he had throughout his life used everything, but abused nothing. Dr. De Bossy's father lived to the age of 108.

Obituary.—Dr. Charles Stammer, one of the leading physicians of Schenectady, N. Y., and a prominent member of the American Medical Association, died April 7th, aged sixty-five years. Death was due to apoplexy.—Dr. J. H. Walton, a well-known physician of Dubuque, Iowa, committed suicide in Lincoln Park, Chicago, April 4th. He was walking along one of the driveways with a friend, when suddenly he drew a razor from his pocket and cut his throat, dying in a few minutes. No reasonable cause can be assigned for the act.—Dr. Morvan died recently in France, aged seventy-three years. He was the first to describe the group of clinical symptoms known as Morvan's disease, which he considered a form of syringomyelia.

Things not Always What They Seem.—From Detroit comes a story which we hope is true about an efficient but illiterate domestic servant who was brought into serious, but happily not fatal, danger by her undue confidence in the deductive system of reasoning. The woman suffered from rheumatism, and one rainy day last week, when her aches were especially severe, she came across a bottle labeled with a few written words and a print of skull and crossbones. Immediately she reasoned that the bottle contained a medicine for complaining bones, and she proceeded to take a heroic dose of its contents. Two doctors and a stomach pump saved the woman's life, but she no longer sees unity of design in the universe and her trust in logic is gone forever.—*N. Y. Times.*

God and the Microbes.—A fairy story written by an authoress of the tender age of six years has just appeared on the shelves of the book venders. The little fairies therein depicted in due time become ill and require the services of a physician. When the fairy doctor arrives he discovers that one has scarlet fever, another diphtheria, and a third typhoid fever. He tells the fairy godmother all about microbes and germs, and instructs her to boil the water. The fairy godmother says she does not understand; if the germ has the fever, why doesn't the fever, which kills little boys and girls, kill the germ? And if the germ doesn't have the fever, how can it give the fever? How can a thing give a thing it doesn't have? The fairy doctor says, "Nobody knows but God."

Kissing the Book.—Acting under orders from the authorities of the town of Bradford, England, a chemist has just made an examination of a Testament which has been used in the Ripon court for sixty years, and which is said to have been kissed by 40,000 people. The analysis was made with a view to ascertaining what danger there is in the practice of "kissing the book." No germs of typhoid fever, tuberculosis, or diphtheria were found. The chemist identified seven species of micro-organisms which cover the three divisions of the fungi order. The only germ of a dubious character was one which is usually found on wounded and diseased skin. Although this germ is not necessarily harmful, there are conditions in which it might produce unpleasant complications, and the chemist said he would not kiss any surface upon which they were spread.

Prosecution for Practising Medicine Without a License.—A curious little problem in law and ethics came up for solution recently at Hazleton, Pa. A man was arrested there for practising medicine without having been registered, as the law of Pennsylvania and most other States requires. He confessed his guilt and admitted that he was well acquainted with, and approved of, the regulation he had violated. Then he proceeded to assert, and to prove by documentary evidence, that he had been graduated from the Medical School of the St. Petersburg University, and had practised in the Russian capital for years. He was therefore quite eligible for registration in this country, but on reaching Hazleton he had found himself penniless and without friends. After he, his wife, and his three children had gone hungry for several days he determined to risk imprisonment in order to supply the wants of his family and incidentally to earn enough money to pay the register's fee. Immediate denunciation and arrest followed. Investigation showed that the man's story was true in every particular. His wants were supplied and he is now openly and successfully following the profession, the practice of which had made him a technical criminal.—*N. Y. Times.*

Special Exercises at the Jubilee Meeting of the American Medical Association.—The Committee of Arrangements has set aside an hour on the second day of the meeting for exercises to commemorate the founding of the Association in Philadelphia in 1847. Dr. Davis, who is recognized by all as the moving spirit in the enterprise, will read a short paper, giving an account of the origin of the Association, and how the objects for which it was founded have been attained. In addition to the address of Dr. Davis there will be two or three other short addresses to add to the interest of the occasion. The founders of the Association believed that it would raise the standard of medical education and combine the medical profession of the United States in one body. The committee has taken steps to secure the attendance at the meeting of the Presidents of the State Medical Societies and the Presidents of the State Boards of Medical Examiners as an illustration of the success attained through the instrumentality of the Association. Of the original members of the Association there are still living Dr. N. S. Davis, of Chicago; Dr. Alfred Stillé, of Philadelphia; Dr. John B. Johnson, of St. Louis; and Dr. David F. Atwater, of Springfield, Mass.

The committee hopes that these gentlemen will all be present to take part in the meeting.

Commissions for the Doctor.—A subscriber of the NEWS has sent us the following circular which he received recently, and which, he significantly remarks, speaks for itself:

"Philadelphia Optical Company, registered, Manufacturing Opticians, 87 King street East, Toronto.

DEAR SIR: If you have not been writing prescriptions for spectacles we would like to have you begin. You can do much good by doing so, and it will be profitable to you. All you need to do is to write the patient's name on the blank we send you, and we will give you . . . of what the patient pays us for the glasses. We have added to our store our own grinding machinery, and can now grind to order any glass for any complicated case in a few minutes. In the past the writing of doctors' prescriptions has been confined to eye specialists. We have in our house an expert optician graduate in optics who tests each eye with the Javal Opthalmometer (*sic*) and the Opthalmoscope (*sic*). If you send your patients to us we will benefit them with glasses at a reasonable price, and give you . . . of what they pay us. This will be all clear profit to you. And you get credit of prescription. We have everything in spectacles in stock, from the cheapest to the best. Hoping you will give us a trial, we remain, Yours truly."

CORRESPONDENCE.

A BOOK REVIEW CRITICISED.

To the Editor of the MEDICAL NEWS.

DEAR SIR: In glancing over the pages of your journal of January 16, 1897, my attention was called to the review of Dr. McGillicudy's book on "Functional Nervous Diseases in Women." Your reviewer so completely condemned the book from every standpoint that my curiosity was aroused and I determined to read it and judge of its merits for myself. Its perusal has led me to feel that your reviewer has either not read the book, with the modest claims made in its preface, or else his condemnatory utterances result from inability to appreciate its good features, or from personal prejudice.

His first criticism would seem to be answered by the fact that there has been no similar publication in the English language.

His second criticism—that much of what the book contains "has appeared over and over again in medical journals, and in monographs and text-books on general nervous and gynecological diseases"—seems to me to be commendatory rather than derogatory, inasmuch as such a compilation gathers much widely scattered material, together with the author's own personal investigations into one compact volume.

As to its typography and chromolithographs, the standing of the publishers will answer for that.

Yours truly,
WENDELL C. PHILLIPS.

NEW YORK, March 10, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

PENNSYLVANIA HOSPITAL'S NEW CLINICAL AMPHITHEATER—ACADEMY OF SURGERY—COLLEGE OF PHYSICIANS—PATHOLOGICAL SOCIETY—DR. H. A. KELLY—DR. J. W. WALK—DEATH OF DR. ENGEL—THE D. HAYES AGNEW MEMORIAL PAVILION—DR. LUDWIG HEKTOEN—CITY BACTERIOLOGICAL LABORATORY.

PHILADELPHIA, April 10, 1897.

WITH the opening of the new clinical amphitheater and receiving wards of the Pennsylvania Hospital a notable addition to Philadelphia's hospitals has been made. The amphitheater, constructed of tile, marble, and iron, and erected upon a steel substructure, occupies a large part of the new building, and is thoroughly equipped with every modern appliance for insuring surgical asepsis; it will seat several hundred students, and is admirably adapted for the purposes for which it is intended. In addition to men's and women's receiving wards, isolating rooms, and a number of small operating rooms, elaborate sterilizing and filtering plants are contained in the new building. The first public clinic was held there on April 3d.

The last monthly meeting of the Philadelphia Academy of Surgery, held on April 5th, was devoted to the consideration of tetanus antitoxin. "A Case of Traumatic Tetanus in which Antitoxin was Used" was reported by Dr. W. G. Porter. Dr. C. B. Penrose read a paper on "Tetanus following Trachelorrhaphy and Perineorrhaphy in which Antitoxin was used without Success." Dr. T. S. K. Morton reported a "Case of Tetanus Treated by Antitoxin as well as by Blood-letting and Saline Infusion." Dr. W. J. Taylor mentioned a case of tetanus occurring in his practice, in which he had administered antitoxin, and although the case did not terminate fatally, Dr. Taylor was inclined to think that it was one in which the patient would have recovered without the use of the remedy. From the discussion of the papers it was apparent that tetanus antitoxin has not yet been established on a firm therapeutic basis.

A stated meeting of the College of Physicians was held on April 3d, at which many valuable papers were read and discussed. One presented by Dr. J. B. Deaver on "Some Mooted Points in the Pathology of Appendicitis, with Especial Reference to the Condition known as Appendicitis Obliterans," provoked considerable discussion, and proved a rare addition to our knowledge of this form of the disease. In the single instance of obliterative appendicitis out of over forty cases of other forms of the disease upon which Dr. Deaver had operated during the last three months, the appendix was converted into a fibrous cord; in the other cases there was a contraction of the lumen of the appendix on the proximal side. In the discussion of this paper Dr. Hearn said that every case of appendicitis which he had seen had been preceded by some error in diet, with which Dr. Harte, who also discussed the paper, agreed. Dr. C. K. Mills facetiously remarked that from the education of the laity generally, and from the tendency of certain neurotics to exaggerate and to imagine ills, some cases might almost be called "cerebral appendicitis."

Dr. H. A. Hare, in a paper dealing with "The Rapidity of the Elimination of Drugs and its Influence upon Their Administration," discussed the inconsistency of giving, as is often done, three or four daily doses of a drug like prussic acid, which is very rapidly absorbed and eliminated; and of administering in rapidly succeeding doses drugs like digitalis and the bromids, whose assimilation and elimination is slow. Dr. Hare concluded that drugs should be administered in doses sufficient to produce the effect sought for, and that this condition should be maintained by smaller doses at intervals depending upon the rapidity with which the drug in question was eliminated. Other papers at this meeting were read by Drs. F. A. Packard, J. Dutton Steele, Arthur Van Harlingen, and J. B. Roberts.

At a meeting of the Philadelphia Pathological Society, held on April 8th, Dr. D. L. Edsall reported an instance of an unusually large gumma of the kidney, and exhibited the specimen from the case. Dr. Edsall and Dr. T. S. Westcott read a paper on "Tuberculous Pericarditis." Dr. M. H. Fussel discussed "Gangrene of the Lung," and reported "A Case of Hemorrhagic Purpura." An instance of cerebral hemorrhage occurring in a girl nineteen years old was quoted by Dr. J. P. Tunis.

Dr. H. A. Kelly, of Johns Hopkins University, delivered a lecture by invitation on "Eras in Gynecology" at the Medico-Chirurgical Hospital, on the evening of April 3d. At the conclusion of Dr. Kelly's address he was tendered a reception by Dr. W. E. Ashton, at which the faculty of the Medico-Chirurgical College and many prominent Philadelphia medical men were present.

Dr. James W. Walk has been appointed by the Mayor a member of the Board of Health to fill the vacancy caused by the death of Dr. P. D. Keyser. Dr. Walk resigned from the Board of Charities and Correction in order to accept this position.

Dr. Hugo Engel died suddenly of pneumonia on April 5th, at the age of fifty-two years. Dr. Engel was formerly connected with the teaching staff of the Jefferson Medical College, of which he was an alumnus, and at one time occupied the chair of nervous diseases at the Medico-Chirurgical College.

For equipping and furnishing the new D. Hayes Agnew Memorial Pavilion of the University Hospital the State Legislature has been asked to give $90,000, and for maintenance an appropriation of $50,000 annually for two years is sought for. By the opening of this new wing 160 additional beds are added to the hospital.

A reception is to be tendered Dr. Ludwig Hektoen, of Rush Medical College, Chicago, on April 22d by the Philadelphia Pathological Society. Dr. Hektoen is to deliver an address before the Society on "The Lesions of the Intercellular Substance of the Myocardium," on the same evening.

During the past year 2385 cultures from cases showing evidences of diphtheria were made at the City Bacteriological Laboratory, with the result that 1442 cases were diagnosticated as true instances of the disease. An indication of the increasing confidence of practising physicians in the laboratory diagnosis of diphtheria is shown by the fact that seventy-six per cent. of the cases examined last year were classed as "doubtful" by the attending physician, while the preceding year a clinical uncertainty was expressed in but forty-one per cent. of the total cases sent to the laboratory. A total of nearly six thousand cultures, both primary and secondary, were examined last year.

OUR ROME LETTER.

[From our Special Correspondent.]

THE STRIKE OF THE STUDENTS AT THE ITALIAN UNIVERSITIES—THE NEW ROMAN POLYCLINIC—DURANTE'S WORK IN INTESTINAL ANASTOMOSIS.

Rome, March 10, 1897.

The Italian Universities are just now confronted by a state of affairs that is extremely interesting to a foreigner. There is a strike (acioppero, as they call it here) among the students of all the universities of the kingdom, and for the moment higher education is at a standstill. There is a solidarity in the student-body here that Americans with their sometimes more than friendly rivalry between universities would find it hard to understand. Such strikes have occurred before, but usually have not amounted to much, though for awhile they may have stopped the teaching at several, or even at all, of the institutions. This year the new Minister of Education, Gianturco, attempted the introduction of some reforms in university matters, and, among other things, he decreed that a supplementary examination should take place about the middle of each scholastic year. His earlier reforms had caused a good deal of disaffection, and this last step at once met with open resistance. The students, first at Palermo, and then gradually at the other universities, refused to continue their studies unless the minister's decree was rescinded. This demand was refused on the part of the government, and an attempt was made to pick out and properly punish the ringleaders in the movement, but without result. This all happened about the beginning of February, and no classes have been held since that time because there has been no one to attend them. The reopening of the university here in Rome was announced for Thursday, March 4th, the day after the termination of the carnival, but as it was realized that it would prove a fiasco, and as the present government, in the disaffected condition of political affairs, cannot afford to be made rediculous, the reopening was postponed indefinitely.

It looks very much as though the current college year was going to be lost to all classes of students as so much of it has been wasted in the squabble. The medical students have usually been most prominent in the student strikes but this year they seem to have followed only where others led. The prospect of the loss of a year's work should apparently bring the men to their senses, but the spirit of disaffection toward the present government is so profound that the sacrifice does not seem to them to be too great. Meantime the students are organizing political schemes for the overthrow of the present ministry at the approaching elections, and are making public demonstrations in the different cities in favor of Candia. These are partly and supposably manifestations of good will toward this candidate, but are also thinly veiled evidences of the present restless condition of the Italians themselves, and so have been forbidden in some places. Our independent American system of university education may have its disadvantages, but at least it is not open to the serious drawbacks that are thus laid bare in a too paternal system of State education.

On the other hand, one of the benefits of State-directed medical education is the magnificent new hospital, "the Polyclinic," for teaching purposes, which is just about ready for occupation. It is beautifully situated on some high ground, just outside the Porta Pia, to the right and beyond the walls of the old Roman "Castra Pretoria." It is an immense building, the hospital departments proper or wards being two stories in heighth, and ten in number in front, branching off from a corridor that runs on each side of the main central building, which is to be more especially devoted to teaching and administration purposes. One half is to be devoted to clinical medicine, and the other half to clinical surgery. It covers an area of ground corresponding to the Pretorian camp in size, and is to have accommodations for about 1000 patients. It is distinctly modern in every respect; the wards are high, well lighted, and airy, and the operating and consulting rooms contain the very latest improvements. No expense has been spared to make it a model hospital for teaching purposes in every respect. Rome has been laboring under the serious disadvantage of her old-fashioned hospitals for a long enough time, and now is to be congratulated on this magnificent addition to her medical equipment.

Things medical are generally very quiet during the enforced vacation. Professor Durante continues his surgical clinics at the Instituto Chirurgico, where his work in intestinal anastomosis has attracted a good deal of attention. He replaces the Murphy button for end-to-end anastomosis by a cylinder of maccaroni that is smaller in diameter at the middle than at either end. In shape and general appearance it resembles the cylinders of decalcified bone, that have been found so suitable for the same purpose in England. His results are excellent and the use of a material that is absorbed *in situ* seems better than a foreign body that must eventually be ejected. The comparative simplicity and inexpensiveness of the cylinder also commends the method.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

POST-OPERATIVE ACUTE SUPPURATIVE MENINGITIS CURED BY TREPHINING—OCCURRENCE OF INTESTINAL LITHIASIS—OPERATIVE TREATMENT OF CARCINOMA OF THE RECTUM—EARLY NERVOUS SYMPTOMS OF POTT'S DISEASE—MULTIPLE LYMPHADENOMATA WITHOUT LEUCOCYTHEMIA.

At a session of the Academy of Medicine held March 2d, Berger discussed *a case of acute suppurative meningitis following operation and healed by surgical measures.* The patient was a woman, aged thirty-three, who possessed, from her fourth year, a swelling corresponding to the frontal sinus. Under the supposition that it was a cyst, Luc resected a part of the anterior wall of the frontal sinus, and there escaped spontaneously, and by curetting, a quantity of colloid and fungoid material, the tumor being a sarcoma. The wound suppurated, and one month later it was enlarged, and an intra-orbital prolongation of the tumor was extirpated after resection of the superior wall of the orbit. Despite drainage, symptoms of meningitis and paralysis of the right side appeared on the eighth day. The posterior wall of the sinus was trephined, the dura was incised, and a coating of pus was wiped from the pia, and the wound drained with iodoform gauze. At the close of the operation the patient came out of the coma which had for some time existed, and recovery was ultimately complete, although complicated by an infectious pneumonia.

The case well illustrates the dangers which may follow operations upon the frontal sinuses. Gauze drainage is certainly preferable to suture in these cases. The advantage of early and wide trephining in intracranial suppuration, whether of mastoid origin or occurring elsewhere, is also illustrated by this brief history.

During the session of March 9th, Dieulafoy said that as a result of observations made by himself, and those previously made by Laboulbene, he concludes that *intestinal lithiasis is of frequent occurrence, and is often associated with mucomembranous enterocolitis.* The gravel or sand or genuine calculi are formed chiefly of calcium and magnesium salts. Etiologically, intestinal lithiasis is oftener found in persons of a gouty diathesis, but this rule is by no means invariable. There may be no special symptoms, but usually there is abdominal pain—often a veritable colic—followed by stools containing a greater or less quantity of gravel, either with or without a mucus discharge.

Quenu discussed *the treatment of carcinoma of the rectum* before the Surgical Society, February 24th. The establishment of an artificial anus, even with any amount of irrigation, etc., of the lower bowel, is not sufficient to secure asepsis in a subsequent operation of extirpation. It is indispensable to carefully obliterate both ends of the diseased organ, so as to remove it en masse, like a cyst. And an incision into the cancerous rectum, or a digital exploration of it during operation, is a serious error. Quenu's method is to make an oval incision around the anus from the coccyx to the superficial transversus peronei muscle. The anus is carefully closed. The sphincter on each side of the anus is dissected and then the superficial and deep transversus peronei until the anus is entirely separated from the levator ani. In this manner the prostate is easily reached, and may be resected in whole or in part, provided a catheter be introduced into the urethra to protect this canal from injury. By this method ten or twelve centimeters of the bowel are readily freed and brought down without great traction.

At the session of the Medical Society of the Hospitals held February 26th, Siredey, in speaking of *the early nervous symptoms of Pott's disease,* placed especial emphasis upon exaggeration of the reflexes indicating a special excitability of the spinal cord, and fever, pointing to infection frequently due to tuberculosis.

Achard said that these and other early manifestations were more frequently seen in adults than in children, because of the slow progress of vertebral tuberculosis in adults.

Moutard-Martin emphasized the importance, in all cases of persistent neuralgia, of the careful examination of the bones. He recalled one case in which excruciating sciatic pain existed for over two years before an osteosarcoma of the iliac fossa gave evidence of its presence by the least swelling.

At the session of March 5th, **Hayem** presented a man who, five years previous, was obliged to give up his work on account of a febrile affection, which was diagnosed as mumps. The swelling never entirely subsided. Some time later the neck began to swell, and then the groins, and ultimately the axillæ, accompanied by cyanosis. The swellings were diffuse, ill-defined, soft at some spots and hard at others, corresponding to indurated and hypertrophied glands. Both the red and white blood-corpuscles were increased—the latter slightly so. Iodid of potassium and arsenic were taken without benefit, but thyroid capsules caused the disappearance of the cyanosis and feeling of depression, while the swellings grew softer under this treatment. The disease seemed to be that of *multiple lymphadenomata without leucocythemia*, differing from the ordinary type of the affection by the participation in the process of the periglandular tissues.

At a meeting of March 12th, **Widal** and **Meslay** described a *post-mortem* examination performed by them upon a man who died of staphylococcus pyemia following a suppurative bunion. There were abscesses in the kidney, epididymis, and lung, and about a quart of pus in the pericardium. There was no history of pain in the gastric region, and there had never been any attacks of vomiting or hematemesis. There was, however, a perforating ulcer of the stomach, the base of which was formed directly by the subperitoneal adipose tissue. Numerous sections were made in the ulcer, but no staphylococci were found. Nevertheless, the writers were inclined to ascribe the cause of the ulcer to the staphylococcus infection.

At a meeting of the Biological Society, held February 27, **Gilbert** described *guiacol phosphate* as a crystalin body without color, smell, or taste, soluble in strong alcohol, but insoluble in water, glycerin, or oil. It contains about ninety per cent. of guiacol. It passes through the stomach without change, but is disintegrated in the intestine and absorbed. It is eliminated chiefly by the kidneys. Compared with other compounds of guiacol, the phosphate possesses the advantage of having a larger proportion of this substance than the others, excepting the carbonate and the phosphite. The phosphate and the phosphite are superior to the carbonate, in that their disintegration sets free a phosphoric radical, instead of indifferent, carbonic acid. On account of a higher melting point (97° C.) and its insolubility in oil, the phosphate cannot be applied to the skin or used for interstitial injections, suppositories, or enemata. On the other hand, the absence of taste and smell, its insolubility in the stomach, and its low degree of toxicity are advantages which will secure for it a place in therapeusis.

Vienna.

FATAL HEMORRHAGE FROM THE EAR IN A CHILD—THE SURGICAL TREATMENT OF SPASTIC PARALYSES—TERTIARY MANIFESTION CLOSE UPON THE PRIMARY SORE.

At the session of the Imperio-Royal Society of Physicians held February 26, **Panzer** described *a case of hemorrhage from the ear*, occurring in a child aged two and a half years, who was operated upon some time previous on account of an aural discharge. Without any evident cause there suddenly developed a hemorrhage from the ear, which was imperfectly controlled by tampons. At autopsy the brain was found to contain numerous tubercles, some of them as large as a pigeon's egg. The temporal bone was carious in many places. The process had eaten away a part of the wall of the carotid canal with resulting hemorrhage. This accident has happened, as far as known, only thirteen times in children.

At the session of March 5, **Lorenz** read a paper upon the *surgical treatment of spastic paralyses*. For practical purposes it may be said that the condition in these cases is one of weakened cerebral influence, and the possibility of walking is often entirely abolished by the contractions. Improvement may be hoped for along two lines. In order to accommodate for the loss of power of certain muscles one may employ apparatus, and counteract the excess of power of some muscles by the use of elastic bands. This method of treatment gives no permanent result, for either immediately or soon after the removal of the apparatus its good effects disappear.

Another line of treatment is therefore to be recommended. The case is not one of paralyzed muscles, but, on the contrary, of muscles which are acting in a vehement, though irrational way. The object of treatment is therefore to lessen their power, while increasing the voluntary control over them. At the same time it is desirable to increase the power of the weaker muscles, and in this way to establish an equilibrium between flexors and extensors. The first of these requirements is reached by tenotomy and the separation of the cut ends. Thus in case of a contractile gastrocnemius, etc., producing the deformity called equinus, a division of a tendon and the separation of the cut ends allows the joint to be moved to greater extent than before, while the posterior muscles are prevented by the lengthening of the Achilles tendon from exerting their full force. There follows in the course of time a spontaneous regulation of the relation between muscle and tendon, although there is a continual tendency on the part of the latter to shorten, unless apparatus be worn to prevent this.

In the form of spastic adduction at the hip-joint with knees crossed and walking absolutely impossible, one may, by gradual stretching of accessory muscles, lengthen them, not in the sense that there is any break in the continuity, but rather that the fine muscular bundles give way in numerous places. In recurrent cases, neurectomy is to be advised. Children walk at first with the feet somewhat separated, but the improvement over the previous condition is striking enough. Electrical treatment, massage, and gymnastics serve not only to restore the power of the weakened muscles, but stimulate the cerebral innervation.

Kahame described to the Medical Club, February 24, a case of syphilis in a woman, aged twenty-eight, who, *before the exanthemata appeared, suffered from periostitis of the skull and the clavicle.* She was treated with twenty-nine applications of mercurial ointment. Later there developed rupia syphilitica, headache, dizziness, whirring in the ears, disturbance of sight, and lancinating pains. There was evidently a lesion in the central nervous system, perhaps a meningitis. At the same time there developed a bilateral atrophy of the optic nerve, with Rhomberg symptoms, and increase in the patellar reflex. Cases in which tertiary lesions follow rapidly the initial symptoms of syphilis are not unknown to medical literature. Kahame at one time saw two cases in whom, before six months had elapsed after the primary lesion, hemiplegia developed.

SOCIETY PROCEEDINGS.

HARVARD MEDICAL SOCIETY OF NEW YORK CITY.

Stated Meeting held March 27, 1897.

The President, John Winters Brannan, M.D., in the Chair.

The paper of the evening, entitled,

"HYDROTHERAPY IN TYPHOID FEVER"

was read by Dr. Frank H. Daniels.

(See page 487)

DISCUSSION.

Dr. R. W. Wilcox said he was glad the author had entitled his paper "Hydrotherapy in Typhoid Fever," because he had never been able to understand why this method of treating typhoid should be called the Brand method. The first important contribution to the subject was that by Currie, and Brand's communication, in 1861, practically attracted no attention until Currie endorsed the treatment in 1866. The Currie-Jürgensen treatment shows many variations in theory. In the beginning, the treatment was used to reduce temperature, but this main reason for its employment seems to have been lost sight of. It was claimed that much good was accomplished by the treatment in the way of stimulating the nervous system, but this is difficult to prove or disprove. The treatment undoubtedly increases the elimination of the urinary toxins, but if this is the main reason for its use in typhoid, it does not seem a sufficient argument. It is generally admitted that the treatment has nothing to do with the patient and nothing to do with the disease. In his experience, the treatment of typhoid by baths had not influenced the course of the disease, except so far as the increased elimination of toxins was concerned. The success which was claimed for the treatment was to be explained by the earnestness and enthusiasm of those who practice it, and by the fact that it gives a direct road in which the physician can travel.

Dr. Arthur L. Fisk said that when he had typhoid himself he had been given the baths, and that he dreaded them exceedingly. It was anything but pleasant to be taken from bed by the head and the heels and dropped into a tub of cold water. The baths had no effect upon the temperature in his case, but when they were stopped, at the earnest solicitation of a relative of his, the temperature subsided, and the fever ran a more favorable course. In Trinity Hospital it was the custom to give typhoid patients sponge-baths, instead of putting them in the tub, and this seemed to him the better way. A rubber sheet is placed under the patient, and the bath given in bed. Most excellent results had been thus obtained. He did not approve of treating any disease in a routine way. In typhoid, the treatment had to be varied to suit the individual. The remarkable statistics of Brand were collected in Germany, and he thought the treatment must be better borne by Germans than by Americans, who seem to be more sensitive. Personally, he had found that careful dieting and the use of castor oil in small doses, every other day, would safely carry many cases of typhoid through the disease.

Dr. Charles L. Gibson said that when he was an interne at St. Luke's Hospital, the bath treatment of typhoid was carried out as a routine measure by Drs. Peabody and Kinnicutt, and it seemed to him to be very severe. He recalled cases of patients who were tubbed as often as seventeen times in the twenty-four hours. The temperature was taken every hour, and as soon as it reached 102.3° F., or over, a bath was given for from five to twenty minutes, usually at a temperature of 65° F. The treatment was hard on the patient, who got no rest at all, and upon the attendants, and at his request the body temperature was taken only every three or four hours, and the baths given less frequently. He was of the opinion that treatment by baths completely changes the type of the disease. Danger of hemorrhage and perforation, however, is not eliminated. He had been especially impressed with the after-appearance of the patients treated by baths, as compared with other typhoid patients. They do not seem to pick up as rapidly as they should, and kidney complications are often observed in the convalescence. They are pallid and anemic, and present the typical kidney aspect. Treatment by baths should be symptomatic. If there is a single high temperature a day, a bath is not necessary.

Dr. S. Baruch said it was an error to say that relapse occurred more frequently in cases which were treated by the Brand method than in others, and that, therefore, this was no argument against the treatment. In regard to the diagnosis of typhoid by the bath, the value of this test had been a revelation to him. He was in the habit of bathing the patient for fifteen minutes in a bath, at 75° F., when there was the slightest evidence of typhoid. This was repeated every three hours, until the temperature was reduced more than two degrees. This test, however, is only of value during the first six days and before the spots appear.

A previous speaker had mentioned the elimination of toxins as the only result of the Brand method of treatment. This is only one of the results; the treatment fulfills every demand of the case. In the first place, it reduces the temperature; secondly, it invigorates the action of the heart, the pulse-rate diminishing in frequency from five to twenty beats after each bath, and, beside the elimination of toxins already mentioned, there is an enormous increase in the quantity of urine passed, sixty-one ounces being quite an ordinary amount, and as much as one hundred and twenty having been noted by the speaker. Another important result of the Brand treatment is the increase of leucocytes in the blood after the baths. By this it was not meant that the leucocytes are produced by the treatment, but that there is such an enormous acceleration of the heart action that they are driven from their hiding-places, so to speak.

He agreed with those who said that routine treatment is bad, but added that the Brand method is not a routine method. It had been thought out under the most definite conditions, the object being simply to improve the condition of the nervous system, which controls all the functions of the body. The baths should be given every three hours, day and night, when the patient is awake, but he is never disturbed for this purpose if he is asleep. The records of 8000 cases of typhoid fever in a military hospital in Germany, covering a period of forty years, during which time there were epidemics of the disease, treated by different physicians, show that just as soon as the Brand method was adopted the mortality was reduced from fifteen to twenty per cent., and that when the mixed treatment (salicylic acid and quinin, with the baths) was employed, this was reduced to seven per cent., and under strict bathing, to 2.7 per cent.

In regard to the case mentioned by Dr. Gibson, where the patient had been given seventeen baths a day, he was surprised to learn that the patient lived to look like a kidney case. Brand never claimed the danger of hemorrhage and perforation is eliminated by the bath treatment, unless the patient was seen before the fifth day, and his 1200 cases show plainly that those patients who died were all admitted after the sixth day. As to the patients treated by the Brand method recovering more slowly than others, the statistics of Vogel, collected in a military hospital, dwell upon this point, and show that the patients were able to go back to their military duty at an early date. He admitted that he thought the treatment harsh and cruel, and that he had seen only one or two patients who did not object to the baths; but he knew of no other method of treatment which produced the same good results, and until such was discovered, typhoid patients must be treated with the means that have been found most efficacious by such men as Delafield and Peabody.

The President said he was extremely surprised to learn of the position taken by the majority of the speakers. He had supposed that the Brand or the Currie-Jürgensen treatment was accepted everywhere, in spite of the disadvantages which Brand himself admits. He had seen excellent results follow this treatment. In Bellevue Hospital it was the custom to give the patients a bed-bath, which is more easily given than the tubbing, and which has the same effect of reducing the temperature, diminishing the nervous symptoms, and causing the patient to sleep. In cases with hemorrhage or perforation, he had seen excellent results follow the use of the cold coil. As it was often impossible for the country practitioner to carry out the tub treatment, he asked Dr. Daniels and Dr. Baruch if bed-baths and the coil could not be used in its stead.

Dr. Baruch replied that he had had no experience with bed-bathing, unless the speaker referred to the sheet-bath, *i.e.*, the patient is wrapped in a wet sheet and enveloped in a blanket; water is thrown on him by the cupful and the body rubbed until it ceased to warm up. He had employed this method while practising in the country, in the Southern States. He did not think it was quite as good as the Brand method, but anything that would give a shock to the peripheral nervous system and a consequent reaction, allowing a quantity of blood to be cooled, would have a good effect and be better than nothing, just as partial asepsis is better than no asepsis.

Dr. Daniels, in closing, said that bed-bathing would answer if good results were gotten from it; if not, it was better to make the patient a little more uncomfortable and give him a Brand bath, for the sake of the good to be obtained. In regard to calling this the Brand treatment, the method he had referred to in his paper was that given by Brand, who had found that by giving baths of a certain temperature, at certain intervals, for a certain length of time, and with friction, the best results were obtained. Dr. Fisk had said that in his case the baths did not reduce the temperature. He had stated in his paper that they had no marked effect on the temperature and that they were not given for that purpose. In regard to the method being a routine practice, the same might be said of the treatment of rheumatism or malaria. The bath treatment could be modified to suit individual cases. In regard to the bad effect of the baths on the nervous system, the case mentioned in the paper of the woman who was seven months pregnant at the time the baths were given, and went on to full term, would disprove this.

Dr. Arthur L. Fisk reported a case of gout, and exhibited a photograph and skiagraph of the patient's hand, which had become deformed during the progress of the disease. (See page 496.)

The President thought the X-ray photographs might prove a valuable aid in the differential diagnosis of this condition.

Dr. Edward K. Dunham reported the following case of aortic aneurism in which the condition was not recognized during life, although there were two large aneurisms—one of the arch of the aorta, and one of the abdominal portions of that vessel. The latter caused death by perforating the diaphragm and rupturing into the pleural cavity.

The patient was a Russian, thirty-nine years of age, who was admitted to the Montefiore Home in October, 1896, and who died March 26, 1897. He was of moderate habits and denied syphilitic infection. His trouble began about two years before his admission to the Home, and first manifested itself by the occurrence of "cramps in the stomach." When he entered the Home he complained of pain in the abdomen, in the back, and in the lower extremities, which was so severe in character as to cause sleeplessness. He was very anemic and much emaciated. The spinal column exhibited a distinct lumbar kyphosis and dorsal lordosis, and the lower part of the thorax was expanded, giving the chest a somewhat bell-shaped appearance.

On auscultation the left side of the thorax appeared to be normal. On the right side the respiratory sounds were absent, except at the apex of the lung and over a small area on the right side of the thorax. These physical signs were due to the aneurism of the arch of the aorta which was discovered at the autopsy. The abdominal aneurism gave rise to a palpable tumor, which was attributed to enlargement of the spleen. The liver was also considered to be enlarged because of its being pushed downward by the thoracic aneurism. There being a suspicion of pernicious anemia, the blood was examined. A few nucleated red blood-corpuscles were discovered, and a slight increase in the number of leucocytes, many of which contained eosinophile granules, was noted, but no indication of the changes characteristic of pernicious anemia was found. On one occasion the urine contained a little albumin, but, with that exception, revealed no abnormal condition.

At the autopsy a spherical aneurism was discovered springing from the right side of the arch of the aorta near its origin which was four inches in diameter. It was filled with firm clots, leaving a clear passage through which the blood could pursue a practically normal course without occasioning any sounds perceptible on auscultation. The innominate artery showed a moderate fusiform dilatation extending from its origin to its point of division. The spleen was normal in size, and was adherent to a large aneurism of the abdominal aorta measuring 8½ inches vertically, six inches transversely, and about three inches antero-posteriorly. The aneurismal sac began as a dilatation of about three inches of the posterior wall of the aorta, and then expanded behind the peritoneum, upward to the diaphragm, and downward for about four inches to a point a little below the bifurcation of the aorta. It dislocated the left kidney and extended to the right across the spinal column, causing an erosion of the last dorsal and first two lumbar vertebræ. The sac had become adherent to and subsequently pierced the diaphragm on the left side, and at this point there was a rupture of the sac, leaving a hole about three-fourths of an inch in diameter through which hemorrhage had taken place into the left pleural cavity, which was found filled with blood at the autopsy. The left lung was compressed and rendered atelectatic, and the heart was displaced to the right by this effusion of blood. The flow of blood through the abdominal aorta did not appear to have been either checked or diverted by the presence of this aneurism, the sac of which was filled with firm and dense masses of clot. These facts explain the absence of any bruit which would have led to a detection of the aneurism during the life of the patient. The middle cerebral arteries on both sides showed numerous miliary aneurisms. The anemic condition of the patient and the changes in the blood are referable to the loss of blood into the aneurismal sacs, and to the consequent attempt to repair the loss of blood-corpuscles.

The case appears of interest because of its obscure nature during the life of the patient, and the proneness of the arteries to aneurismal dilatation without obvious lesions of the vascular walls which would explain their weakness. As yet no microscopic studies of the arteries has been undertaken, and it is possible that, when these have been completed, they will reveal changes explaining the conditions underlying the development of these numerous aneurisms.

DR. HENRY C. COE cited the following cases to show the possible risks of moderate dilatation of the cervix in multiparæ:

CASE I.—Multipara, aged thirty; diagnosis: ruptured ectopic pregnancy, with encysted blood-clot. Cervix had been lacerated bilaterally and had healed, leaving firm cicatrices, especially on the left side. Before opening the abdomen the cervix was gently dilated, first a Wylie and then a Walthan instrument being used. With a separation of a little more than half an inch the cicatrix on the left side suddenly gave way and a deep rent followed, extending up into the broad ligament. After curettement, the uterine cavity was packed with gauze, and the lacerated wound was also lightly tamponed. Celiotomy and removal of the ectopic sac was then done, there being no evidence of internal injury to the broad ligament or of hematuria. Irrigation without drainage was carried out. Uneventful recovery and perfect healing of the cervical tear resulted. The patient has since had two abortions.

CASE II.—Multipara, aged thirty-two; bilateral laceration of the cervix, with extreme induration. Moderate dilatation with Wylie's instrument up to half an inch was performed, when a deep tear occurred on the left side, extending into the broad ligament. Hemorrhage was considerable in amount. After becoming satisfied that the peritoneal cavity had not been entered, a deep wire suture was passed beneath the upper angle of the tear, which controlled the bleeding. The uterus was then curetted, the cervix amputated, and a laceration of the pelvic floor repaired. There was slight febrile reaction on the third day, with pain on the left side. Subsequently, convalescence was normal. When examined a few months later, the patient had a hard, tender cicatrix extending along the base of the left broad ligament, which caused slight deviation of the cervix to that side.

CASE III.—The patient, who was seen in consultation, was a primipara, aged twenty-eight. The operator, an experienced surgeon, was divulsing the cervix preparatory to curettement for incomplete abortion. He stated that on making gentle, steady pressure on the handles of a Wylie dilator, the cervix suddenly tore like wet paper, and there was furious hemorrhage from the left uterine artery. Time was lost in sending for clamps, retractors, etc. He was unable to seize the vessel with forceps, and in order to prevent the patient from bleeding to death, he compressed it with his fingers within the peritoneal cavity until the speaker's arrival, twenty minutes later. He found that the patient had not lost much blood, and was in good condition. Under a good light, he readily succeeded in grasping both ends of the artery, which was undoubtedly the uterine. Two fingers could be passed into the peritoneal cavity through a rent in the posterior fold of the broad ligament, which was partly detached from the uterus. As there was no indication for celiotomy, a gauze drain was inserted, and venous oozing controlled by packing, the clamps being left *in situ*. They were removed seventy-two hours later. An afebrile convalescence followed, the wound healed rapidly, and the patient was up in three weeks.

These cases were mentioned simply to emphasize the importance of exercising more than ordinary care and gentleness in divulsion of a cervix which has healed after a previous extensive laceration, the os being contracted to such a degree that curettement is impossible. The powerful instrument devised by Walthen is certainly a dangerous one to use under such circumstances. In an aseptic operation, mere splitting of the cervix is of slight import, aside from the formation of a large, and often painful, scar. But the injury may be more extensive, as in Case III., involving the risks incident to opening the peritoneal cavity where the aseptic preparation of the vagina may have been imperfect. In any case, it is well not to undertake the simplest gynecologic operation without having at hand the means of controlling hemorrhage and repairing accidental lesions.

Dr. George W. Jarman said he considered the Wylie dilator more dangerous than the Walthen, and knew of two cases in which the fundus uteri had been perforated and one in which Douglas' cul-de-sac had been entered, by it. Laparotomy was done in the two former cases, both of which recovered. In the third case, the wound was carefully sponged after the protruding intestine was replaced, and as there was not much hemorrhage, only one suture was introduced. This patient also recovered. All three cases were drained, for fear the vagina had not been aseptically prepared before the divulsion.

Dr. Johnson of Boston said the parts should be as thoroughly prepared for divulsion and curettement as for an abdominal operation, and cited a case in which death from sepsis followed laceration of the uterus, because the vagina had not been aseptically prepared.

ANNOUNCEMENT.

BRITISH MEDICAL ASSOCIATION.

The sixty-fifth annual meeting will be held at Montreal on Tuesday, Wednesday, Thursday, and Friday, August 31, September 1, 2, and 3, 1897.

PRELIMINARY PROGRAM.

President: Henry Barnes, M.D., M.R.C.S., F.R.S.E., J.P., Physician Cumberland Infirmary, Carlisle.

President-elect: T. G. Roddick, M.D., M.P., Professor of Surgery in McGill University, Montreal.

President of the Council: Robert Saundby, M.D., F.R.C.P., 83A Edmund street, Birmingham.

Treasurer: Charles Parsons, M.D., Dover.

Addresses will be delivered as follows:

"Medicine," Dr. W. Osler, F.R.C.P., Professor of Medicine in the Johns Hopkins University, Baltimore.

"Surgery," Mr. William Mitchell Banks, F.R.C.S., Surgeon to the Liverpool Royal Infirmary.

"Public Medicine."——

The scientific business of the meeting will be conducted in eleven sections, as follows, namely:

MEDICINE.

President—Dr. Stephen MacKenzie, London. Vice-presidents—Dr. J. E. Graham, Toronto; Dr. W. Bayard, St. John, N. B.; Dr. J. P. Rottot, Montreal; Dr. F. W. Campbell, Montreal; Dr. J. Stewart, Montreal; Dr. H. P. Wright, Ottawa. Secretaries—Dr. H. A. Lafleur, Montreal; Dr. W. F. Hamilton, Montreal; Dr. William Pasteur, 4 Chandos street, Cavendish Sq., London, W.

SURGERY.

President—Mr. Christopher Heath, London. Vice-presidents—Sir Wm. Hingston, Montreal; Hon. Dr. Sullivan, Kingston, Ont.; Hon. Dr. Farrell, Halifax, N. S.; Dr. I. H. Cameron, Toronto; Dr. F. LeM. Grasett, Toronto; Dr. James Bell, Montreal; Dr. G. E. Armstrong, Montreal. Secretaries—Dr. R. C. Kirkpatrick, Montreal; Dr. Thomas Walker, St. John, N. B.; Mr. Jordan Lloyd, F.R.C.S., Richmond Hill, Birmingham.

PUBLIC OR STATE MEDICINE.

President—Dr. E. P. LaChapelle, Montreal. Vice-presidents—Dr. Montizambert, Quebec; Dr. R. Craik, Montreal; Dr. P. H. Bryce, Toronto; Dr. Sir James Grant, Ottawa; Dr. R. H. Powell, Ottawa. Secretaries—Dr. Wyatt Johnson, Montreal; Dr. E. Pelletier, Montreal; Dr. Henry Littlejohn, Town Hall, Sheffield.

OBSTETRICS AND GYNECOLOGY.

President—Dr. W. J. Sinclair, Manchester. Vice-presidents—Dr. Wm. Gardner, Montreal; Dr. James Perrigo, Montreal; Dr. J. A. Temple, Toronto; Dr. J. C. Cameron, Montreal; Dr. J. T. Alloway, Montreal; Dr. James Ross, Toronto. Secretaries—Dr. D. J. Evans, Montreal; Dr. W. Burnett, Montreal; Dr. A. E. Giles, 58 Harley street, Cavendish Sq., London, W.

PHARMACOLOGY AND THERAPEUTICS.

President—Dr. D. J. Leech, Manchester. Vice-presidents—Dr. A. D. Blackader, Montreal; Dr. James Thorburn, Toronto; Dr. C. R. Church, Ottawa; Dr. J. B. McConnell, Montreal; Dr. F. J. Austin, Sherbrooke; Dr. Walter George Smith, Dublin. Secretaries—Dr. F. X. L. DeMartigny, Montreal; Dr. J. R. Spier, Montreal; Dr. Charles Robertshaw Marshall, Downing College, Cambridge.

PATHOLOGY AND BACTERIOLOGY.

President—Mr. Watson Cheyne, London. Vice-presidents—Dr. J. G. Adami, Montreal; Dr. J. Caven, Toronto; Dr. J. Stewart, Halifax; Dr. J. C. Davie, Victoria; Dr. L. C. Prevost, Ottawa; Dr. M. T. Brennan, Montreal. Secretaries—Dr. W. T. Connell, Kingston; Dr. C. F. Martin, Montreal; Dr. Robert Boyce, University College, Liverpool.

PSYCHOLOGY.

President—Dr. R. M. Bucke, London, Ont. Vice-presidents—Dr. D. Clarke, Toronto; Dr. T. J. Burgess, Verdun, Quebec; Dr. A. Vallee, Quebec; Dr. G. Wilkins, Montreal. Secretaries—Dr. J. V. Anglin, Montreal; Dr. Geo. Villeneuve, Montreal; Dr. J. G. Blandford, London County Asylum, Banstead, Surrey.

OPHTHALMOLOGY.

President—Mr. Nettleship, London. Vice-presidents—Dr. F. Buller, Montreal; Dr. R. A. Reeve, Toronto; Dr. Ed. Desjardins, Montreal; Dr. A. A. Foucher, Montreal. Secretaries—Dr. W. H. Smith, Winnipeg; Dr. Jehin Prume, Montreal; Dr. T. H. Bickerton, Liverpool.

LARYNGOLOGY AND OTOLOGY.

President—Dr. Greville Macdonald, London. Vice-presidents—Dr. W. Tobin, Halifax; Dr. G. A. S. Ryerson, Toronto; Dr. H. S. Birkett, Montreal; Dr. G. R. McDonagh, Toronto. Secretaries—Dr. Chretian, Montreal; Dr. H. D. Hamilton, Montreal; Dr. W. Permewan, 7 Rodney street, Liverpool.

ANATOMY AND PHYSIOLOGY.

President—Dr. Augustus Waller, F.R.C.S., London. Vice-presidents—Dr. F. Shepherd, Montreal; Dr. A. B. MacAllum, Toronto; Dr. T. Wesley Mills, Montreal; Dr. A. Primrose, Toronto; Dr. J. B. A. LaMarche, Montreal; Dr. D. B. Fraser, Stratford, Ont. Secretaries—Dr. J. M. Elder, Montreal; Dr. W. S. Morrow, Montreal; Dr. Robert Hutchison, London.

DERMATOLOGY.

President—Mr. Malcolm Morris. Vice-presidents—Dr. J. E. Graham, Toronto; Dr. F. J. Shepherd, Montreal; Dr. J. A. S. Brunelle, Montreal; Dr. J. L. Milne, Victoria. Secretaries—Dr. Gordon Campbell, Montreal; Dr. J. M. Jack, Montreal; Dr. James Galloway, 21 Queen Anne street, Cavendish Square, London, W.

REVIEWS.

Diseases of the Stomach. A Text-Book for Practitioners and Students. By Max Einhorn, M.D., Instructor in Clinical Medicine at the New York Post-Graduate Medical School; Visiting Physician to the German Dispensary. New York: William Wood & Co. 1896.

The appearance of a book on gastric diseases from the pen of one who is recognized as an authority on the subject is necessarily of interest. For many years Dr. Einhorn has concerned himself with this chapter of medical inquiry, and has devised methods of examination which have met with more or less approval. The author tells us that it was his design to make this book practical, and by this he evidently means that he leaves scientific questions undecided. That this is the case, we will show later in a few cited instances; but this plan has militated powerfully against the value of the book, for in scientific precision it cannot be compared with the similar works of Boas and of Ewald, and these books, too, are nevertheless practical. Moreover, Dr. Einhorn is capable of writing scientifically, as his published articles have shown.

So far as the contents of the book are concerned, there is little left to be desired in the matter of completeness. The author discusses successively the anatomy and physiology of the stomach, methods of examination, diet, organic diseases with constant lesions, functional diseases with variable lesions, abnormal conditions with reference to the size, shape, and position of the stomach, nervous affections of the stomach, and, finally, the condition of the stomach in diseases of other organs.

In the 478 pages of the book, there is no doubt that, despite the author's evident attempt not to take his readers into too deep scientific waters, very much of value is embraced. The various gastric disturbances, organic and inorganic, are thoroughly discussed, diagnosis and differential diagnosis are exhaustively considered, and therapeutic measures, especially diet, are well presented. But with all this, there is a feeling that the author is concealing something and does not state his own opinion positively enough. The criticism that the author mentions himself and his work too frequently should not be made, in all fairness, since it is *his* experience and *his* opinion that the reader wishes to learn.

Of the omissions, there are not many, Dr. Einhorn even mentioning the Röntgen ray as having some diagnostic value in gastric diseases. He neglects to speak of Kader's method of gastrostomy, and mentions Witzel's method as the latest. He fails utterly to give his opponents a hearing as to the electric excitability of the fundus of the stomach. Of course, Einhorn's electrization of the stomach falls to the ground if Meltzer's experiments are correct; but Meltzer recently (December, 1896) demonstrated before the American Association of Physiologists that the fundus does not contract upon faradic or galvanic irritation, and it would have seemed the part of candor, at least, for Einhorn to have been less dogmatic in his statements in the book under consideration. A record in a text-book is, by that fact, usually regarded as authentic, and it is unfortunate that matters of controversy should be injected as true in a book which is sure to have as wide a circulation as Einhorn's. Experimental evidence, of course, does not impugn positive clinical results, and it is likely that Einhorn's or any other method of electrization of the stomach will be productive of benefit in nervous people, just as the application of the current is helpful in functional neuroses generally.

Transillumination of the stomach is naturally given considerable space, although Dr. Einhorn's method has not met that recognition which he hoped it would. He fails to caution against the use of the gastric diaphane when aortic aneurism is present.

The English is not above reproach. Thus, "there is yet always time" (p. 146), "spikes" for "spokes" (p. 90), "roll particles" (p. 327). In the main, the author's style is flowing, easy, and clear. The illustrations are excellent. Particularly fine are the pathological drawings of Dr. Elsberg, which are worthy of a text-book of pathology. They are well drawn and well reproduced.

This book will have a wide reading, and will probably see many editions. It is, with the exceptions above noted, a good *résumé* of the present knowledge of the subject it considers.

MINOR SURGERY AND BANDAGING. By HENRY R. WHARTON, M.D., Demonstrator of Surgery in the University of Pennsylvania. New (third) edition. In one 12mo volume of 594 pages, with 475 engravings, many being photographic. Cloth, $3.00. Philadelphia: Lea Brothers & Co. 1896.

For the past five years "Wharton's Minor Surgery and Bandaging" has justly held a high place in the regard of medical students. Clearness of cuts and text in the third edition makes the art of surgical dressing and bandaging easily learned. The practitioner will be interested in such authoritatively detailed and faithfully illustrated procedures as amputations, resections, tracheotomy, intubation, etc.

This book is so modern and up-to-date in general that we wonder why space is given to such useless and ancient operations and instruments as the first, second, and third methods of acupressure, Bellocq's canula, scarificator, and sorte-moxa.

PRACTICAL NOTES ON URINARY ANALYSIS. By WILLIAM B. CANFIELD, A.M., M.D., Lecturer on Clinical Medicine, University of Maryland, etc. Second, (revised) edition. Detroit, Mich.: George S. Davis. 1896.

THIS little book is one of the Physician's Leisure Library series, and the author has attempted to point out to the general practitioner, the various methods of examining the normal and pathological constituents of the urine. His efforts are not always satisfactory, and some errors and many repetitions are noted. We do not agree as to the reliability of many of the "test papers" in the examination for albumin and sugar, which are so highly lauded by the author. Most of the illustrations are the ones commonly found in works on urinalysis, but they are poorly executed.

THE DIARY OF A RESURRECTIONIST (1811–1812), to which is added an Account of the Resurrection Men in London, and a short History of the Passing of the Anatomy Act. By JAMES BLAKE BAILEY, B.A., Librarian of the Royal College of Surgeons of England. London: Swan, Sonnenschein & Co., Lim. 1896.

"Ask no questions for your conscience' sake," says Mr. K., the lecturer on anatomy, to his assistant, who is about to receive a body for dissection from the resurrectionists. In such words, Stevenson, in his "Body-snatcher," describes the feeling that was common in the English schools of anatomy in the beginning of this century. For at that time the bodies of executed criminals were the only ones given by law to the medical schools. The supply of material, therefore, often ran short, and the schools had to obtain bodies, often at a high price, from other sources. Thus, body-snatching was winked at by the medical profession, and the body-snatcher or resurrectionist, as he was called, carried on, almost unmolested, his nefarious occupation. He was often a drunken ruffian who hesitated at little or nothing; he bribed custodians of graveyards, desecrated and pilfered graves, and finally, even resorted to murder to satisfy his lust for gold. The notorious murders by Burke, Hare, Bishop, and Williams, led directly to the passage of the Anatomy Act of 1832, which dealt a fatal blow to the resurrectionists' occupation. The "Diary of a Resurrectionist" consists of a series of entries extending over one year, and gives us the actual record of the doings of one gang of resurrection men in London. By far the most interesting part of the little book, however, is the information the author gives us of the origin, workings, and habits of the body-snatchers, and the causes which finally led to their disappearance. We consider the little volume a valuable contribution to the history of medicine.

A TEXT-BOOK ON SPECIAL PATHOLOGICAL ANATOMY. By ERNST ZIEGLER, M.D. Translated and Edited from the eighth German edition by DONALD MACALLISTER, M.D., and HENRY W. CATTELL, M.D. Sections 1 to 8. The Macmillan Co., New York and London. Price, $4.00.

THIS is the first part of Ziegler's Special Pathological Anatomy, and it treats of the blood and lymph, the vascular mechanism, the spleen and the lymph glands, the osseous system, the muscles and tendons, the central and peripheral nervous system and the skin. It is to be followed, very shortly, by a second volume which shall treat of the remaining systems of the body. Ziegler's volumes on Special and General Pathological Anatomy have long been considered by the student and pathologist as the most reliable and resourceful guides to their interpretation of problems in pathogenesis and morbid anatomy. The translators of this volume merit the thanks of English-speaking physicians for the satisfactory manner in which they have performed their task. We do not see wherein they have neglected anything that might have contributed to a more satisfactory presentation of their author's ideas and contributions. The work is up to date, not alone in its subject matter, but in its references; and, fairly so, in its illustrations. Each chapter, or rather the consideration of each subject, is followed by a bibliography, and in many instances this takes up an enormous amount of space compared with the text. Personally, we are of the opinion that the endeavor to consider subjects in a text-book of this kind monographically is a great mistake, and that the space utilized in citing references might be very much better taken up with a fuller discussion of the subject matter, whether it be the views of others, as admitted by the author's experience, or the statement of his individual beliefs.

To the volume is appended an index of more than thirty pages, and we regard this as one of the most commendable features of the work. The book itself will appeal more to the physician and the pathologist than to the undergraduate, and the former will appreciate the copious index. The work contains 308 figures, some of them in colors, most of them very well executed, and they form an attractive feature of the book, which in its general make-up and print is very satisfactory.

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ORIGINAL ARTICLES.

THE DIAGNOSIS OF GALL-STONES.[1]

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Stones in the Gall-bladder.—Gall-stones may remain for years in the gall-bladder without producing any symptoms. It requires but a limited experience in dead-house work to attest the truth of this statement. Yet gall-stones which are too large to leave the gall-bladder, *may* frequently cause severe pain. This occurs when one of them is sufficiently small to engage in the entrance to the cystic duct but cannot make its way into the tube. The cause of this dislodgment may be violence, undue physical exercise, or in some cases the process of digestion.

I saw a case of the latter description a few years ago with Dr. S. Baruch of this city, in the person of a lady about sixty years of age, who was subsequently operated upon by Dr. McBurney. In her case the attacks of pain seemed to be determined by the ingestion of most ordinary food; and her nutrition had suffered in consequence. Her symptoms had persisted for several years, with long intervals of immunity, of course without jaundice; and with the intermittent attacks of pain there was frequently fever of low grade. Her pain was often severe, but not as severe as typical biliary colic, and it was always localized. Complete relief followed the removal of a large calculus from the gall-bladder. Tenderness in the region of the gall-bladder was present during these attacks of pain, but was not a very distressing symptom.

The diagnosis of an *ordinary attack of biliary colic* due to passage of a gall-stone is not difficult, and need not take up our attention.

The complication of other diseases with this distressing series of symptoms has not been common in my experience; but Naunyn speaks of three cases of typhoid fever in which they occurred "in the early weeks," and Hagenmüller has collected reports of eighteen cases of the same disease complicated by biliary colic. The inference has been drawn from these facts, and from the dependence of attacks of biliary colic in some persons upon errors in diet, that peristaltic activity of the intestines tends to cause the discharge from the gall-bladder of stones that previously had not given rise to symptoms, peristaltic activity of the bile ducts and gall-bladder probably being set up by peristaltic activity of the intestines. Physiology teaches that during intestinal digestion the bile is discharged into the bowel in increased amounts in a similar way. Several writers call attention to the fact, as a point of diagnostic importance, that attacks of biliary colic are likely to begin about midnight.

Although the diagnosis is ordinarily an easy matter, still it is possible to confuse such an attack with gastralgia; but in this condition the stomach is likely to be distended with gas, and relief will usually follow its removal. Pressure on the epigastrium ordinarily diminishes the pain of gastralgia, while pressure over the liver region aggravates the pain of biliary colic. Moreover, a chill with fever is much more common in biliary colic than in gastralgia, though this is by no means the rule. The diagnosis is rendered certain if a day or two after the beginning of the attack jaundice develops, if the gall-bladder becomes enlarged and palpable, and if gall-stones are passed by the bowel. But these symptoms are not necessary accompaniments of biliary colic, at least during the first few days. Adler has recently called attention to the frequency with which this disease occurs without icterus. Tenderness over the edge of the liver in the neighborhood of the gall-bladder is a valuable aid in doubtful cases; in the absence of this and other classical symptoms the diagnosis must be left in doubt.

The differential diagnosis between this malady and gastric or duodenal ulcer with severe pain in the epigastrium will sometimes present greater difficulties. Palpation increases the pain of these conditions as it does that of biliary colic. Leube speaks of more than one patient who was supposed for a long time to have this latter malady until a Carlsbad cure brought away biliary calculi in the feces and settled the diagnosis. The possibility of both of these sets of symptoms being set up by the taking of food furnishes an additional element of confusion; but this is much less likely in the case of gall-stones than in that of gastric ulcer, in which latter, too, the *kind* of food is more important as an exciting cause of pain. If the vomited matters contain an abnormally large percentage of acid, this would speak for gastric ulcer;

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[1] Read at a meeting of the New York Academy of Medicine, April 15, 1897.

although a normal quantity or an abnormally small quantity would not exclude a stomach ulcer or even a duodenal ulcer.

Swelling of the gall-bladder and icterus would speak loudly for the biliary origin of the symptoms, of course, if they happened to be present. This condition might be confounded with lead colic as well as with constipation and intestinal colic; and it resembles some cases of peritonitis very clearly. With renal colic confusion is less likely on account of the very generally classical distribution of the pain in this affection.

Hepatic neuralgia has been described among the possible symptoms which would simulate the affection under discussion, but this seems to me unlikely as it is unusual in its occurrence. I have never met with it, although I am aware that it is said to occur in nervous, anemic people, who are subject to neuralgia elsewhere in the body.

Impaction of calculi in the cystic duct, if it continues, is productive of further symptoms and physical signs. Tait's statement, that impaction of calculi in the cystic duct causes more severe pain than when the impaction occurs in the common duct, has been disputed by Courvoisier, but it certainly does cause severe pain. Death, in collapse, has followed in nine cases of biliary colic, but in these cases the site of the calculus has usually been the common duct. The gall-bladder is sometimes quickly distended by fluid by the lodgment of a stone in the cystic duct, and this may happen long before jaundice indicates the passage of the stone further onward into the common duct. The gall-bladder then becomes palpable as a fluctuating tumor, unless the abdominal wall is very thick. This condition is to be distinguished from a *floating kidney* in a variety of ways. The connection of the tumor with the liver, its movements with that organ during respiration, and the impossibility of displacing it, or causing it to disappear upward, or downward, are all of great assistance in its recognition. It is very confusing if this distended gall-bladder is surrounded, as it sometimes is, by a tympanitic zone. Occasionally, too, the tumor admits of being displaced laterally even beyond the median line.

Another element of confusion is the fact that sometimes the enlarged gall-bladder will vary much in size and distinctness. It will sometimes partially empty itself of its seromucus contents, and become almost, or quite imperceptible. This was noted by Tait in two cases, and by Courvoisier in one. In all three cases the operation disclosed large stones in the cystic duct, and in Courvoisier's one of these formed a ball valve in the canal, which allowed free passage of fluid at times. This intermittent character of the gall-bladder tumor is less surprising when it occurs in consequence of repeated lodgment of different calculi in the cystic, or the common duct.

Muscular paralysis of the gall-bladder is said to occur from over distension, as it does in the urinary bladder. Petit reports a case of this kind. When the patient stood erect the gall-bladder gradually filled; when he laid down, or when pressure with the hand was made upon the fundus it gradually emptied itself. After it became empty bile appeared in the stools. Other similar cases have been reported. Absence of jaundice in these cases would locate the obstruction in the cystic duct.

A fixed tumor of this kind has been mistaken for a liver lobe of abnormal shape, and *vice versa*. I have seen an abnormally pendulous liver, with a tongue-like projection from the right lobe, mistaken for a condition of hydronephrosis; and in that case serious damage to the liver by a surgical operation resulted in the patient's death.

The conjoint occurrence of a gall-bladder tumor with hydatids, in the same case, was very puzzling to Frerichs.

The diagnosis is greatly facilitated in cases of gall-bladder dropsy by a history of previous attacks of biliary colic, followed by a gradually developing tumor at the site of the gall-bladder, which can be traced under the liver, and which lies directly beneath the abdominal wall. This is rendered practically certain if the lower end is convex, its surface smooth, if it allows of some lateral displacement, and moves up and down with respiration. If these signs are present, with local tenderness and fever, and perhaps adhesions to the abdominal wall, one would think of empyema of the gall-bladder. A rough, uneven surface of the tumor and adjacent liver would indicate carcinoma of the liver and gall-bladder.

As Courvoisier says, every tumor in this situation, or adjacent thereto, should be at first suspected of an origin in the gall-bladder. A dilated gall-bladder has been found to occupy the greater part of the abdomen, and has been mistaken for an ovarian tumor. Gall-stone crepitus has been felt when the bladder is full of stones, and its walls are lax, with relaxed abdominal walls. If the obstruction continues unrelieved numerous secondary conditions may develop beside those already alluded to, such as calcification or atrophy of the gall-bladder, or a formation of pouches, or diverticula, which usually contain gall-stones, as well as destructive and other processes in other organs.

Calculi in the Common Duct.—If the common duct be occluded the diagnosis is rendered easier by the invariable occurrence of jaundice. This jaundice may be intermittent in intensity, and sometimes may completely disappear and recur at irregular intervals. This is explained by supposing the obstruction to be intermittent. The jaundice may be followed by serious lesions, or it may persist for years without other developments. A common occurrence, under these circumstances, is the development of catarrhal cholangitis. This may be accompanied by chills and intermittent fever closely resembling true malarial paroxysms in the regularity of their recurrence. If to this is added a large spleen the condition may be very confusing, The differential diagnosis is made by blood examination revealing the absence of the malarial organisms, and also by the impotency of quinin to control the supposed malarial paroxysm.

In some cases a deepening of the jaundice has been noted immediately after each paroxysm. At the time of the paroxysm pain in the liver region is complained of, and gastric disturbance, with vomiting, is not unusual. The temperature often rises to 103°, 104°, or 105° F. The nature of this intermittent fever is still undecided. Charcot believed it to be due to the presence of a ferment in the bile passages. Osler tells us that bacteriology has revealed an invariable infection of the passages with lower organisms; and probably their presence accounts for the recurring attacks resembling ague, as well as for the liability of these patients to suffer from septic processes in general, such as ulcerative endocarditis and pericarditis. The colon bacillus, streptococcus pyogenes and micrococcus lanceolatus have all been found. Hepatic intermittent fever is not peculiar to obstruction by gall-stones, for it occurs in obstruction from any cause, or from pressure by a morbid growth, etc., but it occurs less commonly from such causes than from obstruction by a calculus.

The effect upon the liver of the continued obstruction of the common duct is variable. It is rarely enlarged, but its connective tissue is apt to be increased. An artificial cirrhosis has been produced in rabbits by tying the common duct. Dilatation of branches of the hepatic duct to a varying extent has been observed. This dilatation is sometimes extreme, the canals assuming the size of the small intestines. In one case a cystic dilatation of a duct was mistaken by a surgeon for a gall-bladder, and incised. The mistake was revealed at the autopsy. Dilatation of branches within the liver is sometimes so general as to give a general cystic appearance to the cut surface of the organ. In some cases the liver fluctuates in consequence of these numerous large cavities filled with fluid. Trifling degrees of violence have caused rupture of these thin-walled sacs. Liability to this accident is increased by suppuration, which often accompanies the condition. The contents of these dilated ducts is generally bile, but its color, consistency and translucency all vary greatly. In a few cases it has been a watery fluid quite devoid of the elements of bile.

Suppurative cholangitis is a frequent sequel, with the formation of multiple abscesses in the liver and the supervention of symptoms of pyemia. This condition is, of course, invariably fatal. Its course is marked by a partial fading of the jaundice, and no tendency of it to deepen after the chills, which are likely to occur. Usually the liver is distinctly enlarged, and very tender to pressure. Several such cases have come under my observation.

Perforation of the gall-bladder or of the ducts has frequently occurred. The symptoms of these perforations of course depend upon the other organs involved. Communication between the ducts and the portal vein has been established, also between the gall-bladder and hepatic duct. Perforation into the abdominal cavity is more common, in which case general peritonitis or localized abscesses may result. In one of my autopsies, perforation of the duodenum had occurred; a communication with the gall-bladder was established, which allowed the passage of a large calculus. This was arrested in the ileum and death resulted from intestinal obstruction. Numerous cases of this kind have been recorded by various writers.

I have mistaken the effects of a perforation of the gall-bladder, which was caused by a gall-stone, for appendicitis. Eight or ten years ago a man was brought into one of my wards in the New York Hospital in a very feeble condition with what I believed to be appendicitis. He had fever, and great tenderness and pain in the right iliac fossa, and there was a sense of resistance and some tumifaction and dulness. Dr. Weir, who has published a report of the case elsewhere, saw the patient with me and concurred in the diagnosis. The operation revealed bile-stained fluid in the fossa and a ruptured gall-bladder containing a large calculus. In those cases in which the cecum and appendix are displaced, so as to lie near the gall-bladder, a differential diagnosis between cholelithiasis and appendicitis may not be possible.

Communication with the stomach, jejunum, and ileum has occurred, but is rare. Many cases of opening of the colon have been recorded. The pelvis of the kidney has been opened and it is possible for the urinary bladder itself to be similarly affected in case of a greatly distended gall-bladder. Between the bile passages and the lungs openings have frequently occurred. Bile may be coughed up in considerable quantities. In seven such cases recovery has taken place. This communication with the lung is usually due to other causes than gall-stones, such as hydatids and ascarides with consequent abscess formation. Of all these fistulous communications, that which takes place externally through the abdominal wall is the most common. Courvoisier has collected 184 such cases, in fifty per cent. of which the opening occurred in the right hypochondrium. In twenty-nine per cent. it was in the region of the navel. The number of stones discharged in these cases varied from one to many hundreds. Recovery took place in seventy-eight cases, some with operation and some without.

With the obstruction in the *common duct* by calculi any considerable distension of the gall-bladder with fluid is much less likely to occur than is the case if the cystic duct is obstructed, but if the obstruction of the common duct be due to other causes, gall-bladder dilatation is common enough. This is explained by the belief that in cholelithiasis the gall-bladder has already undergone atrophy in most cases before lodgment of the stone in the common duct; whereas, in obstruction due to pressure from without, no such change in its structure has occurred. Continued irritation of calculi in the common duct, as in the gall-bladder, has been the starting point of carcinoma—less frequently at the former site than at the latter.

For therapeutic purposes, especially from the point of view of surgery, the differential diagnosis between obstruction of the common duct by a calculus and obstruction by other causes, such as external pressure, becomes of great importance. Courvoisier has shown that the following points may be considered important in connection with the diagnosis of obstruction by a calculus:

1. Former attacks of jaundice of short duration.
2. Persistent jaundice of varying degrees of intensity.
3. Jaundice persisting for years.
4. Former attacks of colic, especially if associated with jaundice.
5. Former passage of calculi in stools.
6. Tumor of the gall-bladder, absent or small.
7. Fever of more or less intermittent character.

Calculi in the hepatic ducts sometimes accumulate in large numbers; but hitherto the diagnosis of this condition has not been practicable, owing to the absence of symptoms that could be considered distinctive. Pain without definite characteristics is often present. In some cases it is severe, in others not; in some cases persistent, in others paroxysmal. Vomiting often accompanies these attacks of pain. The size of the liver is not typical; it may be large, normal, or small. Jaundice is not always present, and usually is not intense when it exists. Intermittent fever may occur. Under these circumstances it is not surprising that this condition is hardly ever suspected during life, and is discovered at autopsy as a surprise.

THE TREATMENT OF CHOLELITHIASIS.[1]

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The medical treatment of cholelithiasis is considered naturally under the heading of (I.) the treatment of the attacks of colic, and (II.) that of the intervals, or the use of prophylactic measures.

I. *Treatment of the Attacks.*—The pain of hepatic colic excited by the passage or impaction of one or more gall-stones is often among the greatest physical agonies with which man may be afflicted, and demands prompt and vigorous measures for relief. It is comparable only to the pains of childbirth, angina pectoris and nephritic colic. From ¼ to ½ of a grain of morphin, with $\frac{1}{100}$ of a grain of atropin should be injected at once, preferably in the hepatic region, and from 15 to 30 minims of spirits of chloroform should be administered in cherry-laurel water, either alone or with ʒ j of Hoffman's anodyne. The chloroform acts as a local anodyne, and also tends to lessen the spasms of the walls of the biliary ducts which is believed to exist. Being promptly absorbed by the stomach, the chloroform passes into the portal system and directly reaches the liver. Belladonna and sulphuric ether may be employed for a similar purpose, but they are usually less effective. A large, very hot flax-seed poultice should meanwhile be applied over the region of the gall-bladder, and maintained there for several hours. If the pain admits of the patient being moved into a bathtub, complete immersion of the body in water at 104° or 106° F., is often soothing. Should these measures fail, the production of the first stage of chloroform narcosis, as in labor, is indicated.

Relief of the colic by no means indicates betterment of the local condition, and a much more complex question is that of the possibility of accelerating the passage of the stone or stones. Theoretically, this might be accomplished (*a*) by increasing the driving force behind the stone, namely the hepatic pressure, the gall-bladder contractile power, or the peristaltic action of the gall-ducts; (*b*) by lessening the resistance in advance by facilitating the relaxation of the muscular walls of the ducts; (*c*) by reducing the size of the stone by some solvent. Unfortunately, however, the solution of these problems has thus far proved most discouraging.

a. To increase the expulsive force, the so-called cholagogues, such as podophyllin, calomel, etc., have proved of little avail, for they are too slow and uncertain in action to relieve the immediate attack.

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[1] Read before the New York Academy of Medicine, April 15, 1897.

Massage of the gall-bladder, with the object of forcibly expelling the stone or of stimulating contraction of the bladder, has been attempted, but, as a rule, it is impracticable and dangerous during the attack. The hepatic region is not very accessible to such treatment, is often too painful, and the gall-bladder itself is by no means always palpable—it may even be reduced in size by spasmodic contraction. Moreover, if the stone has caused abrasion, inflammation or ulceration of the duct, perforation may be produced by forcible handling of the patient.

At best the hepatic pressure is very low, and the main propelling force of the stone is in the peristaltic contraction of the gall-bladder and ducts. Drugs which, like strychnin, stimulate peristalsis in general, are far too slow and uncertain to be relied upon in the emergency of biliary colic. Irrigation of the colon by cold water is believed to excite a reflex peristalsis of the biliary passages, but it has been more successful in catarrhal duodenitis than in cholelithiasis.

b. To lessen spasm the best remedies are those already mentioned for the relief of pain, namely morphin, belladonna, chloroform internally or by inhalation, and external heat.

Much has been written during the past few years of the value of olive oil in large doses. This treatment is an old method which was revised by Sée, Rosenberg, and others, about eight years ago. The oil is given upon an empty stomach in quantities from two ounces to a half pint, when it is believed to pass promptly into the duodenum. The ordinary commercial oil is often irritating when used in such doses, therefore care must be taken to secure a pure preparation. It has been shown by Burbank that after the administration of oil in this manner, masses of inspissated fatty acids, soap, and mucus are passed from the rectum, which have no doubt in many instances been mistaken for small gall-stones.

I have given this treatment a thorough trial, but have failed to be convinced of its benefit. One patient at the Presbyterian Hospital passed a large number of genuine facetted stones shortly after taking the oil, but another, seen during the past season at Bellevue Hospital, took over 100 ounces of oil in divided doses during a period of two months, without any appreciable effect upon her attacks, which increased rather than lessened in frequency, with deepening jaundice, enlargement of the gall-bladder and intense paroxysms of colic, returning every few days. In still other cases I have observed no effect at all attributable to the oil, nor is it easy to understand why there should be any. The explanation of its action, which has been advanced by some authors, that the oil "lubricates" the passages is almost too absurd for serious consideration. It is not a function of the common bile duct to absorb oil or anything else from the intestine, and it is an elementary physiological fact that even when taken in great excess, fats and oils are absorbed almost exclusively by the lacteals, and hence enter the lymphatic vessels rather than the radicals of the portal system, and their further course is too remote to admit the belief that they can ever reach the mucous lining of the gall-ducts.

Enthusiastic believers in the efficacy of treatment by specific remedies are apt to forget that there is much in coincidence. It may easily happen that a stone has nearly completed its passage at the time when a medicine is given, and medicine and stone may happily reach the intestine together without the slightest relation of cause and effect. It must be acknowledged, however, that a large number of experienced clinicians have reported cases favorably treated with olive oil, cases in which repeated attacks of biliary colic have not only been relieved, but in which other prominent symptoms, as jaundice, local tenderness, swelling, etc., have promptly disappeared. In explanation of these cases Weil suggests that the oil has a soothing effect upon the mucous surface of the duodenum, which in some manner is reflected to allay irritation in the bile ducts. He claims to have derived similar advantage from its use in several cases of passage of renal calculi.

c. The hope of reducing the size of the stone *in situ* by any of the present medicinal means is as futile as are the attempts to dissolve renal or vesical calculi when once formed. Chloroform and ether are both good solvents of cholesterin, but it is highly improbable that they can reach an impacted calculus in sufficient strength to act upon it when given in justifiable dosage.

Permanent impaction is the exception, not the rule, and in the majority of cases, like the child during labor, the stone is extruded without medicinal aid, although the process may be extremely tedious and painful. The chief indication for the treatment of the attack is, therefore, to mitigate the suffering of the patient.

II. *The treatment of the intervals*, or the prophylactic treatment, would be more promising were the bile a less complex fluid, and if gall-stones were not found from time to time in almost all classes and conditions of patients, their existence being often the discovery of the pathologist and not of the clinician. According to Schröder, they are present in twelve per cent. of all autopsies. Theoretically, however, the prophylaxis would similarly fall under three headings: (*a*) The prevention of hepatic engorgement and of the accumulation of bile in the liver or gall-bladder. (*b*) A dietic regimen, withholding such foods as are likely to eventually furnish the elements of cholesterin in excess. (*c*) The giving of sufficient fluid to in some degree dilute the bile and prevent too great viscidity of the vesical mucus.

a. The prevention of hepatic engorgement is to be accomplished (*a*) by familiar hygienic measures and (*b*) by cholagogues and cathartics. Alcoholic stimulants, over-eating, tight-lacing, and sedentary habits with cramped positions are to be particulary avoided, while exercise in the open air, especially that form of it made expressly for the liver, horseback riding, should be encouraged. As hepatic stimulants and cathartics, a host of drugs have been prescribed. Prout and Harley strongly favor the use of sodium bicarbonate in doses of from half a dram to one dram, which may be given in a pint of hot water at bedtime, while Bouchard prefers acetic and citric acids. My own experience coincides with that of many others in obtaining the best results from sodium phosphate. A dram or two of the salt should be given in bitter infusion or in hot water on rising in the morning, and an equal quantity of glycerin may be added with advantage. If this dose does not keep the dejecta free and well colored, it should be repeated once or twice later in the day. By some, Carlsbad salts are preferred, and the Carlsbad "cure" itself has many advocates. A good dose of blue mass or of calomel once or twice a week is serviceable in robust or plethoric subjects. Abdominal massage will benefit the obese.

b. Dietetic Treatment.—I have as yet to find any special menu which yields satisfactory results in many cases of hepatic calculi, yet it is well to regulate the patient's diet within certain limits, for the presence of gall-stones is often related to excesses of the table in regard to both food and drink, and food which increases the acidity or lessens the alkalinity of the secretions is believed to favor the precipitation of the deposits. In the opinion of Frerichs, this is further aided by too long intervals between meals, which allow of the accumulation of bile in the gall-bladder.

Among other explanations of the formation of the stones is a preponderance of fat in the diet, although cholesterin is not a true fat, but an alcohol allied to fat in some of its properties. Dujardin-Beaumetz, on the other hand, abandons the proscription of fats and carbohydrates, and gives eggs, starches, green vegetables and fruit, directing his patients to avoid fish, meat, and alcohol.

Among several cases of biliary colic that I have lately seen, one was that of a Russian peasant woman, forty-six years of age, who had lived very largely upon fish for several years, and another that of a man of thirty-two years, who had been all winter at a Long Island farm, having no fresh vegetables, but a few potatoes, and subsisting mainly upon salt meat—yet I do not attach much importance to such dietic observations. Graham of Toronto reports a case of fatal hemorrhage in a woman of seventy-six years, whose gall-bladder was full of calculi, and who had subsisted for a long time previously upon potatoes, bread, and sweets.

Glisson favors a diet for man consisting largely of green vegetables, because he found gall-stones to be present oftenest in cattle and sheep in the springtime after they had lived upon dry food all winter, but Graham attributes this rather to lack of exercise. The fact that these stones are common in herbivores does not necessarily furnish argument for dietic treatment in man, for their bile is of somewhat different composition.

Harley, who has given more attention than any other author to the prevention by dietic treatment of a return of cholelithiasis, called attention to its greater prevalence in cold latitudes than elsewhere, and attributed this fact to the influence of certain foods, especially meat, fat, and suet. He wrote: "Starchy puddings and fat bacon cause more gall-stones in this country (England), I believe, than all the other kinds of food put together." The hydrocarbons are more completely consumed during early years than after middle life, and to this, possibly, is due the greater prevalence of gall-stones in the latter period.

Bauer believes that "the formation of gall-stones may often be referred to a faulty diet, for an excessive consumption of meat or free indulgence in fat and in spirits, would probably favor their formation"—yet the Eskimos are nowhere mentioned as being especially prone to their formation, and the members of the Nansen expedition lived in perfect health for nearly three years while subsisting largely upon meat and fats. Nansen writes ("Farthest North," vol. ii, p. 540) that he gained nearly twenty-two pounds in weight, and one of his companions gained over thirteen pounds, and adds: "This is the result of a winter's feeding on nothing but bear's meat and fat in an Arctic climate." Nevertheless, animal food may itself contain cholesterin and should therefore be eaten sparingly by those who are subject to biliary colic. Calves' brains, and the viscera of animals used as food in general, and particularly the liver, must be wholly forbidden. It is well also to forbid sugars and fats in every variety. Some vegetables, such as peas and carrots, are believed to contain material which closely resembles cholesterin. Carrots, moreover, are sweet, and sweet vegetables and fruits should be avoided, as should butter, and also egg-yolks, on account of the fat which they contain. Fresh green vegetables and acid fruits which, by virtue of their alkalin salts and organic acids, easily combine in the blood with alkalin bases, should make the basis of the diet in cholelithiasis. The potassium salts, which are contained in potatoes and other vegetables in abundant quantity, are believed to be serviceable because they retard the liberation of calcium, which has been shown to precipitate cholesterin. Bread and well-cooked cereals and fresh fish (except salmon, mackerel, and trout which are fat) may be eaten. Chicken or lean beef may be allowed, but all meat should be eaten very sparingly and not oftener than once a day.

c. The Use of Fluids.—For the purpose of diluting the blood, and through it the bile, large quantities of fluid should be ingested, but it is best to avoid the aerated waters and mineral waters containg salts of lime, although other alkalin waters are very beneficial. Pure waters like the Poland, which contain a minimum of mineral ingredients, are good, although they do not possess any great advantage over ordinary water, if the patient can only be persuaded to drink it freely. A tumblerful of hot water may be drunk at night, and another on rising in the morning. Champagne and other beverages which hold much carbonic acid gas in solution must be avoided, as must malt liquors. In fact, the patient is usually better without alcohol in any form, although a little claret may be allowed if necessary. Coffee and tea may be taken in moderation, but milk, from its tendency to produce "biliousness," is not recommended.

If the case be one in which considerable gastric catarrh or dilatation of the stomach is present, it is inadvisable to give much fluid by the mouth, and sometimes the desired result may be obtained by injecting salt solution into the colon. Intestinal irrigation, as well as active purgation, favors removal of the bile and prevents its accumulation in the gall-bladder.

In conclusion, the prophylactic treatment recommended as being, on the whole, most satisfactory, consists of the daily use of sodium phosphate with glycerin, and a moderate diet from which fats, sweets, and alcohol are excluded, and meats reduced to a minimum, with an abundant supply of simple fluids as diluents. It may be added that while the therapeutist often gropes in the dark in vain efforts to reach the hidden calculi, the surgeon can now throw full light upon them by operations which promise not only relief but permanent cure, with a measure of safety which is constantly increasing. In cases in which jaundice or local tumor and tenderness persist, and particularly where there is prolonged elevation of temperature, or where the attacks of colic return with increasing severity or frequency, it is worse than useless to temporize with medicinal agents, and the remedies above enumerated are applicable only for temporary relief of colic, or in mild cases, or when the patient refuses operation.

SOME REMARKS ON THE SURGERY OF THE GALL-BLADDER, AS INFLUENCED BY ANATOMICAL SITUATION.[1]

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As THE time allotted to me is necessarily very brief, I shall not attempt an exhaustive exposition of all the important factors to be considered in the treatment of the surgery of the gall-bladder, but will confine myself to sketching the variations in the anatomical situation of this organ, and the manner in which these variations will influence the surgical therapy directed against maladies caused by gall-stones.

The first object of all surgical measures directed against the various affections of the gall-bladder is the *exposure* of that organ Ordinarily, and fortunately so, this is a comparatively easy matter; and this is partially due to the fact that the gall-bladder is normally situated in the anterior part of the external longitudinal fissure of the liver, and therefore is to be found near the anterior margin of this gland, and partially to the following circumstances: In many, I might say most, cases of gall-bladder trouble, considerable distension of this organ exists, which has a pronounced tendency to elongate its main axis, and, as a result of this, we find the gall-bladder prominently projected downward and forward, so that it can easily be touched through the abdominal wall. In suitable cases, when the abdominal walls are thin, the presence of a tumor of the gall-bladder can be observed by the eye, also, in the shape of a roundish, pyriform mass, rising and falling with the movements of respiration.

In women suffering from gall-stones (and these make up the great majority of the sufferers from cholelithiasis) another circumstance tends to facilitate the finding of the gall-bladder, in a large proportion of cases, namely, the characteristic elongation downward, a tongue-like projection, of the right lobe of the liver, so often found as a consequence of habitual tight lacing. When the common duct also is obstructed, the liver, as a whole, becomes intumescent, and is found projecting several inches downward beyond the costal margin.

Whenever these conditions prevail, and the gall-bladder can be felt in the shape of a characteristic tumor, an easy operation may be expected, as far as the anatomical circumstances are concerned. A small longitudinal incision, carried through the abdominal wall over the long axis of the tumor, will at once expose it, and frequently the mass can be brought out of the abdominal cavity, and the subsequent steps be attended to, extraperitoneally. The safest procedure is to put a gauze packing around the protruding gall-bladder, to prevent its slipping back and to guard against soiling the peritoneum; then to evacuate its liquid contents by aspiration; finally, to incise and remove the concretions from the gall-bladder, or the cystic duct, by suitable manipulations. A small calculus forceps, or a blunt, spoon-shaped scoop, will be found very useful. If the dislodgment of a stone in the cystic duct is impossible by these means, the subsequent steps ought to be as follows: The gall-bladder must be thoroughly wiped out and dried with small sponges held in a long forceps; the edges of the cystic incision should be pulled forward and held up by assistants, while the operator removes the packings, one of the assistants being charged with guarding the cystic orifice with a sponge, held in a proper manner to catch escaping blood and secretions. Now the operator passes his index finger along the under surface of the gall-bladder into the abdominal cavity toward the cystic duct while his scoop or forceps is made to approach the concretion through the interior of the organ. A combined manipulation of finger and instrument will often be crowned with success. If this does not succeed, two fingers may be passed down to the stone, and another trial be made. Should this also fail, the external incision must be sufficiently enlarged, either longitudinally or transversely, to enable the surgeon to expose and reach the site of the impaction. A crushing of the concretion by finger pressure may be tried, but will not often succeed, and then, the surrounding peritoneal contents being suitably protected by gauze packing, the cystic duct is sufficiently incised over the stone to permit of its extraction. A gush of bile—usually more or less infected—will follow the extraction, and will have to be caught in sponges. If the duct be much dilated and hypertrophied, the place of the incision easily accessible, and the patient's condition good, the little wound may be closed by a few fine silk or catgut stitches, which must not include the mucous lining. This suture, however, is not necessary, as the tendency to spontaneous closure of the incision is very marked. In case it is decided not to suture the incision a drainage tube is placed so as to inosculate, as it were, with the slit, and packings are carried down around it to the duct, surrounding it on all sides in the manner of a well. Then the first soiled packings may be withdrawn, or, if the contents of the gall-bladder were manifestly purulent, should be left intact for a few days, after which they may safely be removed, and the external opening reduced in size by secondary abdominal suture. I have found a transverse incision through the abdominal walls very useful in giving access to the deeper bile passages, and whenever I find the first longitudinal incision inadequate, I always add a transverse one, making the wound L-shaped. The tendency to the formation of hernia is very slight in this part of the abdominal wall.

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[1] Read at a meeting of the New York Academy of Medicine, April 15, 1897.

Some additional points to be observed whenever a gall-bladder is to be incised may also be mentioned. Often while aspirating cystic contents the needle will bring out clear serum at first, and for a considerable time. But this should not delude us into believing that we are dealing with a simple hydrops of the gall-bladder, as the corpuscular elements of pus have a tendency to gravitate toward the neck of the organ which is nethermost in the recumbent posture, permitting clear serum to collect at the top. Therefore, whenever relaxation of the walls of the gall-bladder has proceeded far enough to permit of the fixation and extraction of the cyst from the abdomen, the patient should be turned over on the right side, the wound being well down, and suitable provision made to direct the escaping contents away from the packings guarding the peritoneum. It will be seen as a rule, that the last gush of liquid emerging consists of thick, glairy pus. A careful toilette of the interior of the gall-bladder, and a change of all soiled packings, should precede any further steps.

The more acute the general and local symptoms, and the more prominent the signs of sepsis, the more painstaking should be the care and caution of surgeon and assistants. When the state of a gall-bladder is approaching the condition of phlegmon, characterized by the presence of free ascitic fluid in the dependent parts of the peritoneum, by intracystic suppuration, or multiple foci of suppuration in the wall of the gall-bladder—occasionally reaching the acme of these processes in the shape of gangrene, the procedure should be directed in the first line toward safe evacution, *and that only.* The same principles prevail here as obtain in evacuating a circum-appendicular abscess, and all avoidable manipulation and exposure should be carefully shunned. Search for stones is only permissible as far as it is easily carried out, and the surgeon's eagerness should not be allowed to compromise the patient's recovery from impending sepsis. As soon as the septic element is out of the way, it will be time enough, and much safer, to institute a search for stones, which, by the way, may become entirely unnecessary through their spontaneous evacuation, which is not at all rare.

In a case of phlegmon or gangrene of the gall-bladder, even much stitching of the organ to the abdominal walls should be avoided. The sutures will not hold in the brittle and rotten material, and chief reliance should be placed on a comprehensive and adequately distributed packing. But when the bladder walls are sound, it is proper to fasten them to the abdominal walls by suture, and when the contents of the gall-bladder have been innocuous and a thorough toilette possible, or when the manipulations have been all carried on outside of the peritoneal cavity, the suture may be so arranged as to accomplish at the same time a closure of the abdominal wound. To facilitate this, the parietal peritoneum is first attached to the edges of the cutaneous incision by a number of cutgut sutures; then the peritoneal covering of the gall-bladder is neatly sewed to the everted parietal peritoneum all around, which finishes the procedure. For this latter suture fine silk is preferable to catgut. In very fat subjects, or in the presence of the bronchial or pharyngeal catarrhs of elderly people, a more carefully made, and double or treble line of sutures will be necessary to prevent possible rupture and the escape of gut during fits of coughing. Even so, accidents will occasionally occur, even as late as a fortnight after the operation, as happened in my own experience two years ago.

As you have noticed, I have laid especial emphasis upon the consideration of the anatomical relations of the gall-bladder, as they affect the various surgical procedures demanded by morbid conditions of that organ. So far, we have discussed the steps usually employed in what may be called a *normal* state of affairs. Let us now examine what is fortunately *unusual*, though not rare in the situation of the gall-bladder. Often, the gall-bladder is found embedded in a maze of adherent omentum and gut, but this does not prevent or materially impede access, as separation, blunt or by cutting, will readily open the way to the goal. Great difficulty of access, however, is caused by a deep situation of the gall-bladder, that may be due to one of two causes: The gall-bladder may be located very far back on the under surface of the liver, or the liver itself may be situated very high up behind the thoracic wall. And if you add to this that the gall-bladder itself may be shrunken and atrophied to a little sac, contracted around a nodule consisting of a nest of stones, you will have an ensemble of all those conditions which render cholecystotomy uncomfortable and difficult.

I have, at the present moment, examples of both of these combinations occupying beds at Mt. Sinai Hospital. In one case there was an unmistakable history of gall-stone colic, but no tumor could be demonstrated. The lower margin of the liver could not be felt, and dulness on percussion began fully three inches above the costal arch, extending correspondingly higher than usual along its upper limits. The edge of the otherwise normal-looking liver could be seen only after two of the lowermost ribs had been excised, and even then the situation of the shrunken gall-bladder was so deep that attachment to the abdominal wall was out of the question. A large horizontal incision had to be made to enable us to expose the organ by extensive packing away of the viscera. A formal well of gauze was built up from under and behind the gall-bladder up to the surface, and this cylindrical space was firmly plugged up by another system of gauze packings, the latter being marked. Twenty-four hours later the core of the packing was removed, whereupon the shining apex of the gall-bladder appeared in the bottom of our well. Incision released a moderate quantity of pus and glairy mucus, and thirteen stones were extracted, the last one from the cystic duct. Bile began to flow immediately. Four days latter the first packings were all replaced by fewer and smaller ones. The patient, a woman of thirty-two, is doing very well.

In the other case we had the combination of a contracted gall-bladder, which was situated very far back in the external longitudinal fissure and deeply embedded in the parenchyma of the liver itself. We proceeded similarly in this case also, doing the operation at two sittings, and evacuating several semi-solid tenacious concretions. This patient also is convalescent.

Of the so-called "ideal cholecystotomy" I have no personal experience. It consists in the evacuation of the cystic contents, and immediate occlusive suture, both of gall-bladder and abdominal wall. It seems to me, that the advantage of an immediate restitution of normal anatomical conditions is not counterbalanced by the dangers of possible leakage due to imperfect drainage toward the duodenum.

Whenever the gall-bladder, or cystic duct, is found to be changed in such a manner as to justify the suspicion of a neoplasm, it is proper to excise it. The technic of cholecystectomy is also much influenced by the anatomical situation of the organs in question. In addition to the relations enumerated, may be mentioned the fact that the gall-bladder has occasionally a complete peritoneal investment, and this is attached to the liver by a perfect mesentery, containing nutrient vessels, which must be secured by ligature before being severed. Occasionally the gall-bladder is completely buried in the parenchyma of the liver. Between these two extremes all gradations may be observed, the most common arrangement being that the upper surface of the gall-bladder is attached to the liver by loose connective tissue, the rest of its surfaces being covered by peritoneum. According to these variations, and dependent upon its superficial or deep situation, excision of the gall-bladder will be an easy or a difficult undertaking. Separation from the liver by blunt dissection will be easy, and the hemorrhage from the raw hepatic surface can be readily controlled by packing and pressure. The pedicle, consisting of the cystic duct, is to be tied firmly before the gall-bladder is cut away. As the ligature may easily cut through brittle structures, causing leakage, it will always be safer to drain than to occlude completely.

Cholecystenterostomy, that is, the establishment of an open communication between the gall-bladder and the gut, is indicated in the presence of a hopeless obstruction of the common duct by a neoplasm or intractable stricture. It is most readily accomplished by means of Murphy's button, which can be applied rapidly and with a considerable degree of safety, the former a most important element in dealing with individuals generally weakened by neoplastic cachexia and victims more or less of cholemia.

PRACTICAL OBSTETRIC NURSING.

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IN ancient and medieval times, when the practice and art of medicine was enveloped in superstition, but little attention was paid to the nursing of the sick, and it was not until the advent of the Crimean war that any organized effort was made to give it a practical application as an auxillary to the treatment of disease. Now, it has been so far developed as to constitute both a science and an art, and training schools for the thorough education of young adults in nursing have been established in connection with all large hospitals. Nevertheless, by far the greater part of nursing, especially of obstetric cases outside of the maternities, is done by those who have had no systematic training for such work; and it is largely due to this fact that we meet with so many serious complications in connection with midwifery cases, some of which are fatal to mother or child, while others entail a prolonged illness or a life of future invalidism to the unfortunate victims.

The proper nursing of obstetric cases begins, in my opinion, as soon as the woman knows that conception has taken place. During the first seven months, in by far the greater number of cases, this need consist of only extra care as regards personal hygiene, combined with the application of rational ideas in relation to dress. The corset should be laid away, the clothing loosened, and the skirts hung from the shoulders. Moderate exercise in the open air should be taken when the weather will permit; and the various excretory functions of the body should be kept active by means of diet, frequent baths, followed by brisk rubbing, and the ingestion of liberal amounts of pure water. In case nausea and vomiting are severe, they should receive attention from the family physician; if slight, they may be controlled by regulation of the diet, which should be easily digestible, and include milk, eggs, and fruit in liberal quantities. I do not believe in the practice advocated by some of restricting the diet to certain articles deficient in the bone-forming constituents, with the idea of rendering labor less painful. Such a process of semi-starvation must be injurious to both mother and child, while at the same time it but imperfectly accomplishes the result desired.

By far the most serious complication to which the pregnant woman is liable is structural disease of the kidney, by which the excretion of the various poisons suspended in the urine is prevented. This disease is generally considered to be due to the pressure of the enlarged womb upon the ureters, and obviously this is most apt to occur when intra-abdominal pressure is the greatest, that is, during the last month of pregnancy, although cases of renal involvement have been reported as early as the fourth week. If neglected, in about thirty per cent. of cases, such lesions will terminate in general convulsions, coma, and death. Fortunately, most cases are attended by albuminuria, and this can readily be detected by examination of the urine, which should be tested frequently during the last month of gestation. The other symptoms which indicate nephritis, and which should always excite alarm, whether accompanied by albuminuria or not, are scanty secretion of urine, severe or frequently recurring headaches, dropsy, especially of the eyelids and face, and disturbances of the special senses, as manifested by persistent ringing in the ears, dimness of vision or flashes of light before the eyes. A few cases occur where these symptoms are very mild or transient, yet, ordinarily, the patient or her nurse, if aware of the serious import of these symptoms, will be able to discover some evidence of nephritis in every case where it exists. The disease is most apt to develop in women pregnant with their first child, and as they are naturally timid about consulting a physician, or suppose their symptoms are the natural and necessary result of their condition, they let the golden opportunity pass, in the vain expectation of soon being better. Every expectant mother should place herself under the watchful care of her physician as early as the beginning of the eighth month. She should also notify him in advance as to the time of her expected confinement, so that he can arrange his affairs, as far as possible, to be with her when needed. Some authors hold that the physician should examine every patient during the last month of pregnancy, to ascertain the position of the fetus *in utero*, and, if unfavorable, to correct it. I cannot endorse this fully, as in about ninety-five per cent. of all cases the head presents, and hence requires no interference; while in the five per cent. in which we find a faulty presentation, we can remedy it, before the onset of labor, only in a very small proportion of cases. However, when a previous child has presented by the breech or shoulder, it is an excellent rule to follow.

As the breasts increase in size during pregnancy they should be protected from pressure, and the nipple, if depressed, should be drawn out by the fingers or suitable suction apparatus several times a day. It is generally advised that the nipples be hardened by bathing with brandy or cologne-water, but Keating takes exception to this. He claims that if the woman begins handling the breasts early she will gradually accustom the nipple to rough manipulation, very much the same as a baseballist's hands are hardened by constant practice. In case the weight of the breast or tension within it becomes so great as to cause distress, it may be relieved by thoroughly anointing it with vaselin or cocoa butter and applying a supporting bandage.

Previous to labor the woman should provide herself with at least two bandages or binders, to be worn by her during her confinement to bed. Whatever arguments may be advanced against the use of the bandage, it is still a fact that it gives support to the flaccid abdominal walls, and is generally gratifying to the patient; besides, it affords an opportunity to fasten the napkins in place. The bandage should be about ten inches wide, with darts over the hips to make it fit the body, and should have a perineal piece about four inches wide. I cannot recommend the use of buttons or buckles to fasten the bandage, as I have found them unsatisfactory, and hence prefer common pins. I apply the bandage tightly at first, but after two or three hours have it loosened if it does not become so from the further contraction of the womb and adjustment of the abdominal organs.

As soon as labor begins the physician, or midwife, and the nurse should be summoned; and here a few words of advice are necessary. My father used to say that people always sent either fools or children after the doctor, meaning thereby that he was seldom able to ascertain anything from the messenger about the patient he was to see. It is very important, especially in cases where the physician has not been engaged in advance, that he be told before leaving his office that the case is to be a confinement; and it is still more important if it is an abortion, for he will then almost certainly need his obstetric instruments. He should not be called until it seems certain the woman is in labor, and the messenger should be able to give her history and subjective symptoms up to the time he left home.

The bed should be prepared by removing the feathers and spreading a heavy blanket on the mattress, and over this a sheet. Then a sheet should be folded so it will be about eighteen inches wide by thirty-six long and placed crosswise of the bed where the patient's hips will come, and on top of this one of her prepared bandages. Over all this a rubber sheet should be arranged—which sheet, by the way, every accoucheur should carry in his satchel—and on this a small blanket or folded sheet, or, better still, a layer of absorbent cotton quilted on heavy paper, as this can be burned after labor is completed. The bed-room should be large so as to give ample room, and the patient should lie so that her head will be at the physician's left hand as he faces the bed. She should be clothed in her night garments, and have a folded sheet pinned around her waist, next her body, with the pin over her right hip, and, as she lies down, should have her clothing pulled up above her waist. By means of this her bed and clothing will be kept dry, and after the soiled clothes are removed there will be no need of changing her to another bed. A couch or lounge is very undesirable for a confinement cot, as it is too low and too narrow to be convenient for the attendant.

While waiting for the physician the patient should have an enema of soap suds to unload the bowels, and should also receive an antiseptic vaginal douche, especially if she has had any leucorrheal discharge. The external genitals and adjacent parts should also be thoroughly bathed with a 1-to-2000 sublimate solution. The woman is then ready for examination. For this purpose she should lie on her left side with her hips near the edge of the bed and her knees drawn up. The physician, after thoroughly warming and disinfecting his hands, should examine thoroughly to ascertain the progress made and also learn, if possible, the position of the fetus in the womb. After this, if the labor is not too far advanced, the woman may be allowed to sit up or even be encouraged to walk about. The conversation in the lying-in chamber should be of a cheerful nature, and the mention of recent deaths or of cases of serious sickness are wholly out of place. Likewise it is best that the nervous and over-sympathetic mother, unless able to control herself, should be excluded from the room; but at least two efficient assistants, in addition to the nurse, should be in attendance.

At the onset of labor, the nurse should provide the following articles, in addition to those already mentioned: A liberal supply of both hot and cold water, wash-bowls, soap and towels, one or two extra sheets, a supply of clean, old cloths, to be torn up as necessary, a flannel blanket to receive the baby in, six or eight napkins, a chamber vessel, a pair of sharp scissors, a paper of common pins, a paper each of large and small safety pins, a tumbler (not a goblet), and a teaspoon. She should also have at hand a complete suit for the child, a bottle of sweet oil, castile soap, soft wash-cloths, absorbent cotton, dusting powder, and a comb and brush. I always carry in my satchel a syringe, antiseptic tablets, and ligatures for tying the cord. These last are made by twisting together three strands of No. 16 cotton thread and doubling, and I find them better than tapes or silk, as they are strong and will not slip.

During labor the nurse should render what assistance she can, and when chloroform is used, as during the delivery of the head and in all obstetric operations, she should administer the anesthetic by means of an inhaler, under the direction of the physician. After the birth of the child, she should grasp the fundus of the womb through the abdominal wall, for the purpose of steadying it and assisting in the expulsion of the placenta, and subsequently preventing relaxation of the organ, with consequent hemorrhage. It is well that she keep the womb thus under control until the soiled cloths are removed and the bandage applied.

After delivery, the external genitals should be gently bathed with a hot antiseptic solution, and all blood removed from the thighs, perineum, and buttocks. In instrumental cases, or where the hand has been introduced into the womb, or we have any other cause to fear infection, an antiseptic intrauterine douche should be given. In other cases, in ordinary country practice, it is unnecessary. I do not advocate the routine use in private practice of injections during childbed, unless we have some positive indication calling for them. However, upon the first detection of any odor to the lochia, a vaginal douche of 1 to 5000 bichlorid, or a two-per-cent. creolin solution should be used as often as the urgency of the case seems to require. In maternities and thickly populated cities it is, no doubt, a proper precautionary measure to employ douches for five or six days following confinement, in every case. At present there seems to be some diversity of opinion as to the proper use of antiseptics in obstetrics; yet their employment in certain cases and under certain conditions has become well-nigh universal.

When labor is completed and the childbed toilet arranged, the woman should be given an opportunity for rest and sleep. If chilly, she should have a cup of hot coffee or milk, and be covered up well. A hot-water bottle should also be placed at her feet. All conversation with her and noise in the room should be interdicted. The child should be cared for in another room, and after the mother has slept, or at least rested, for half or three-quarters of an hour, it should be put to her breast, as the reflex stimulation of the womb thus excited will prevent the accumulation of intra-uterine clots.

It frequently happens that women, after childbirth, suffer from retention of urine. The nurse should bear this fact in mind, and not allow the patient to suffer pain from a distended bladder, while thinking her agony due to the inevitable after-pains. At intervals of about eight hours, unless contraindicated by some special condition, she should be lifted up in bed, and placed on a chamber vessel to urinate. By this means drainage from the womb and vagina is also secured. If retention ensues which is not relieved by hot cloths placed over the bladder, or by assuming the upright position, the catheter must be promptly passed.

The napkins should be made of sterilized gauze or absorbent cotton, and should be about four inches wide by twelve long. If cotton cloth or linen is used, it should be boiled, and afterward soaked in bichlorid solution and dried in a bake oven. The napkins should be prepared only as needed for use, and should be changed as often as they become much soiled. The bandage and bedding must also be changed as soon as soiled, and the discharges not allowed to dry on them.

If, when the milk appears, the breasts become over-distended and painful, part of the milk must be drawn away; otherwise, it may give rise to inflammation. Cracked or abraided nipples should receive immediate attention on account of the danger of infection. They should be gently washed with plain warm water before the child is put to the breast, and after nursing the milk and secretions from the child's mouth must be washed away with an antiseptic wash and an astringent dusting powder applied. Except in the mildest cases, a nipple shield should be employed, as it will hasten recovery and add to the comfort of the mother; but it must be kept scrupulously clean. Care must also be taken that the breasts are kept warm and not exposed to draughts of air, and if the milk leaks away soft cloths or absorbent cotton must be worn on the breasts and changed as often as they become wet.

In case of stillbirth, or when for any reason the child is unable to nurse, it will be necessary to stop the secretion of the milk. For this purpose the breasts should be well padded with cotton and a bandage applied smoothly and tightly. At intervals they should be bathed with a strong camphor solution, or belladonna liniment should be used under direction of the physician.

The duration of childbed varies in different cases. It should not be prolonged unnecessarily, yet it should cover the time of the most active involution of the womb, usually from seven to ten days. This rule should also be rigidly enforced in cases of abortion, at least after the second month. The bowels should be moved on the second day by enema or saline cathartic, and after that a movement secured every day. Much may be done to secure this by proper diet, which may include fruits, fresh meats and vegetables, oatmeal, prunes, and figs, but salt meats, milk and its compounds, pickles, pastry, cheese, and tea should be avoided.

In bathing and dressing the child, it is essential in the first place that the room be very warm. All draughts, as from swinging doors, must be studiously avoided. The nurse should begin by anointing the child with sweet oil or vaselin in order to dissolve the waxy material with which it is covered. After a few minutes she may begin washing it, first carefully cleaning the eyes, but using no soap to them on account of the irritation which it may produce. The water and wash cloth with which the body has been washed should never be allowed to touch the eyes, as infection might result. Subsequently, if the eyes become inflamed the fact should be promptly reported to the physician. In some States, and among them New York, failure to so report cases of inflamed eyes occurring during the first two weeks of life is a misdemeanor punishable by fine or imprisonment.

Probably the best treatment of the cord consists in washing it with bichlorid solution and dusting it with aristol or other antiseptic powder and enveloping it in a light layer of absorbent cotton. It should then be laid upward on the abdomen and a bandage applied, and not meddled with again, without just cause, for about five days. By that time it will generally come away, but no force is to be used to detach it.

The new-born child, in normal cases, does not need nourishment other than that it can get from the breast. It is a mistake to feed babies during the first few days, as it is not so intended by nature, and it is apt to give rise to colic. A babe frequently cries because its mouth is dry, hot, and uncomfortable, and it should be given water several times a day. It should also have water each time after nursing to rinse out the mouth. For the first day it should be put to the breast every hour; after that the interval should be lengthened. Ordinarily, if the child vomits or cries within a short time after nursing, it is evidence that it gets more than its stomach will hold comfortably, and it should be nursed less often or, better, not allowed as much at a nursing. If for any reason artificial feeding has to be resorted to later on, cow's milk should be diluted according to the age of the child, and sugar of milk and bicarbonate of soda added. Great care must be taken that the milk is not tainted in the least, and in hot weather, or where the milk has been transported some distance, it should be sterilized. The milk used should be taken from the mixed product of the whole dairy, and not from that of a single cow, as it will be less likely to vary from day to day. There is no prepared food manufactured which will take the place of cow's milk where the mother's milk is not available.

Frequently, the new-born babe will go for several hours, or even a day or more, without urinating; this will cause its parents much anxiety, but ordinarily no treatment is required. In such cases, nurses sometimes steep pumpkin seeds in water and give the decoction to the child, and this, they think, works like magic. The question of constipation in infants is too great to be considered in this place, and I would advise, in such cases, that the family physician be consulted and given entire direction of the child.

CLINICAL LECTURE.

PRACTICAL OBSERVATIONS ON THE CLASSIFICATION, ETIOLOGY, AND PATHOLOGY OF POSTERIOR DISPLACEMENT OF THE UTERUS.[1]

By JOHN M. FISHER, M.D.,
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In order to fully comprehend the significance of abnormal deviations of the uterus it is of first importance to have a proper conception of the normal position of the organ. The uterus, as is well known, has no fixed normal position, but occupies its place in the pelvic cavity in a state of mobile equilibrium, with a constantly prevailing tendency, however, to an almost horizontal position anteroposteriorly; so that upon examinating a given subject in the erect posture, the bladder and rectum being empty, the fundus of the organ may be palpated immediately behind the symphysis, while the cervix forms a right angle with the vagina about two centimeters from the point of the sacrum. Your attention has already been drawn to the anatomy of the structures, and to the ever-changing position of the uterus consequent upon different bodily postures, varying degrees of intra-abdominal pressure, and the repletion and depletion of the rectum and bladder, the latter organ being particularly concerned in the production of physiologic retrodisplacements.

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[1] A clinical lecture delivered at the Jefferson Medical College Hospital, February 23, 1897.

A uterine retrodisplacement, the result of a full bladder, for example, is physiologic because the organ returns to its former anteverted position immediately upon the evacuation of the vesical contents. A retrodisplacement, on the other hand, that remains uninfluenced by these extraneous forces is considered, not in all cases pathologic, but abnormal. Another matter of importance in the study of the normal position is that the uterus is slightly anteflexed at the junction of the body with the cervix, and at this point is possessed of a certain resiliency, or spring-like flexibility, which may be readily detected upon making a proper bimanual examination. This should be constantly borne in mind in order to appreciate the structural changes that frequently complicate abnormal displacements. The symptoms in the presence of anterior displacements are more frequently due to an associated metritis, with consequent rigidity of the organ at this point, than to the apparent version, or to the angle of flexion, and this obtains none the less in very many cases of retrodisplacements. The point I desire to make is that, while permanent anterior and posterior displacements of the uterus are abnormalities in themselves, anatomically considered, they frequently fail to constitute disease clinically. In support of this view I might urge a well founded additional reason, in that displacements of the uterus often exist without symptoms. To concisely formulate our observations bearing upon this subject thus far, we would say, therefore, that persistency of position, or stability of form, or both combined, are characteristics of abnormal displacements of the organ.

In no class of gynecologic disorders is a proper classification of so much importance to the practising physician as that of retrodisplacements of the uterus. Intelligently conceived, it at once becomes an index to both diagnosis and treatment. Unfortunately, great refinements of this subject have been introduced by different writers, that serve no practical purpose, but, on the contrary, have a tendency to confuse, rather than enlighten, the student in his search after useful knowledge. The classification, I shall give you, is easy of comprehension, and, to my mind, a most useful working formula at the bedside. Retrodisplacements, for practical purposes, should be considered—first, anatomically; second, etiologically; and third, clinically, as follows:

Anatomically—Retropositions, retroversions, retroflexions, retroversio-flexions, retroversions with anteflexion.

Etiologically—Congenital, puerile, acquired.

Clinically—Pathologic, complicating, indifferent.

The anatomic classification is of value for statistical purposes, and to express the exact position of the organ in language that cannot be mistaken. *Retroposition* of the uterus was discussed in detail at a former lecture, and will not be referred to again. *Retroversion* may be defined as a persistent posterior inclination of the uterus upon its transverse axis so that the fundus is in relation with the sacrum, while the cervix approaches the symphysis pubis. *Retroflexion* is a persistent posterior inclination of the body of the uterus, with coincident flexion upon its posterior face at its junction with the cervix. *Retroversio-flexion* is a retroversion, plus a retroflexion. This is the most frequent form of retrodisplacement of the uterus. *Retroversion with anteflexion* is a persistent posterior inclination of the uterus, with either coincident flexion upon its anterior face at the juction of the body with the cervix, or anterior flexion of the intermediate portion of the cervix.

The etiologic division of the subject is of special value, since the first thing to do in the treatment of any case, where this is possible, is to remove the cause of the disorder. A *congenital* retrodisplacement is one that has existed from birth. The term *puerile* is applied to cases that date their origin from the developmental period before puberty; and among the main factors operating upon the growing and pliable uterus in a deleterious way at this time are improprieties in dress and obstinate constipation—very important facts to bear in mind, when we come to consider the question of prophylaxis. By an *acquired* retrodisplacement we usually mean one that has occurred after the advent of puberty. Finally, to institute proper treatment in a given case, it becomes necessary to determine whether the displaced uterus in itself is really responsible for the prevailing symptoms, or whether the malposition is secondary to some more important pathologic lesion; hence, the clinical division. A *pathologic* retrodisplacement is one giving rise to symptoms that depend either upon the malposition itself or to diseased conditions, the result of the positional disorder. By a complicating displacement we understand that the displaced uterus is associated with, or constitutes a part of, pelvic disease of a more serious character than could be accounted for by the displacement itself. As distinguished from the two preceding, an indifferent retrodisplacement is one that is unattended by symptoms, whether the organ be movable or adherent. The latter condition may be likened to an ankylosed joint, the result and ultimate cure of a coxalgia. In the clinical sense, neither constitute disease, and I may state, in passing, the indication in the one is equally applicable to the other, and that is to "leave well enough alone."

Faulty obstetrics and improper care of the puerperal woman are responsible for the vast majority of retrodisplacements of the uterus. In a subject of ordinary development, after the completion of the third stage of a properly conducted labor, the contracted uterus is generally seen bulging the lower abdomen, and may be felt as a round, hard body, reaching about four or five inches above the level of the symphysis. Within one week the involution process has reduced the organ in weight from two and two-fifths pounds to one pound, and by the tenth day it is usually so much reduced in size that the fundus only slightly overtops the pubis.

Very commonly, after delivery, the patient is directed to remain lying on her back, the accoucheur applies an abdominal binder that is tightened from time to time for a period extending over ten days or two weeks; the patient's bowels are often confined for three or four days at a time, and the bladder is still more frequently allowed to go for twenty-four hours, or even longer, without being emptied of its contents. Think for a moment, and you cannot but appreciate the pernicious influences that such forces must have upon a recently emptied uterus, inclining as it does, with the greatest freedom, to one or the other side with the changing position of the patient.

Retrodisplacement early in the puerperium cannot occur, because the uterus, at this time, is too large to pass the promontory and accommodate itself to the hollow of the sacrum; but as involution progresses, say after the lapse of three or four days, you can readily test the facility with which posterior version may be accomplished by simply depressing the organ with one hand over the abdomen, while the cervix is tilted forward into the axis of the vagina with the other. Once the fundus has passed the promontory and the intra-abdominal pressure is brought to bear on its anterior face, retroversion exists, and unless corrected before involution of its supports adapts these to the new position of the organ, it is sure to remain permanent. A tightly applied binder, or a full bladder, or both together, acting upon the body of the puerperal uterus, with, in many cases, the additional force of a distended rectum pressing the cervix forward at a time when retroversion is possible, may, and often do, accomplish precisely the same thing.

The process of involution referred to is not confined to the uterus and its appendages, but applies to its ligaments, in fact to all of its direct and supplementary supports, including the vagina and the perineum, and, though rapid at first, requires seven to eight weeks for its final completion. This retrogressive change, however, may fail, or, after having reached a certain stage, may be arrested, owing to the supervention of certain local diseased conditions, or some constitutional state favorable to the production of subinvolution. This may obtain with reference to one or several of these structures, or all of them combined, and whenever it does occur is almost certain to result in a displacement of one or more of the generative organs, frequently involving either the rectum or bladder, or both together.

A subinvoluted uterus, by its increased weight, makes extraordinary and very often impossible demands upon the integrity of othewise efficient ligaments. Owing to want of necessary support it descends from its normal level in the pelvis, the cervix seeks the axis of the vagina to escape resistance from behind, while the other end of the uterine pole is tilted backward, so that the intra-abdominal pressure previously directed against the posterior face of the body of the organ now in turn impinges upon the fundus and anterior surface, thus still further increasing the displacement, and accordingly as the uterine wall is rigid or softened will the displacement remain a version, or have superadded a condition of flexion. If, in addition to the enlarged state of the organ, the ligaments are likewise in a state of subinvolution, or the vagina and perineum continue softened and relaxed, you can readily understand how these structures by the loss of function constitute contributing elements in the production of retrodisplacements, or how they permit a displacement to take place, in the presence even of a normally involuted uterus.

In our study of this subject it is well to bear in mind that a retrodisplacement of the uterus may be due primarily to what we term sectional subinvolution. The anterior wall of the organ, whenever this has been the site of placental attachment, may be thus affected, while involution progresses normally throughout the rest of its structure, thus leading to a comparative shortening of the posterior segment with resulting backward flexion of the body upon the cervix. These respective conditions may likewise obtain with reference to the transverse division of the organ into body and cervix, involution of the former taking place, while the process at some stage may be arrested in the latter, or *vice versa;* in either case the uterus is heavier than normal, and is therefore liable to undergo descensus and posterior version.

Among the most frequent causes of retrodisplacements of the uterus referable to the puerperal state are lateral rupture, muscular diastasis, and overstretching of the pelvic floor. The primary effect of any one of these accidents is loss of function on the part of the levator ani muscle. This muscle, covered by its fascia, as you well know, enters very largely into the formation of the pelvic diaphragm, and thus acts as a means of supplementary support to all the upper pelvic organs. It is directly concerned in maintaining a closed condition of the vagina, preventing prolapse of its walls, and by its attachment to the lower bowel preserves the sigmoid curve of the rectum, holds the anus at a proper level, and performs the very important function of making counter pressure during defecation. The straining efforts incident to an evacuation of the rectum, especially in the presence of constipation, causes descent of the uterus with a tendency to retroversion, until arrested by the resisting fibers of the levator ani, while subsequent muscular contraction of the uterosacral ligaments is the chief factor in restoring the uterus to its previously anteverted position upon the completion of the act. Whenever the levator ani has been ruptured or is relaxed, therefore, it causes relaxation, and in most cases gaping, of the vagina; the gluteal cleft becomes more or less obliterated by a dropping of the anus and rectum to a lower level, so that defecation subsequently is accomplished solely at the expense of intra-abdominal effort, and prolapse of the uterus and its appendages, as well as that of neighboring organs, either separately or conjointly, is apt to follow. Permanent backward displacement of the uterus under such circumstances occurs in consequence of the increased latitude for downward displacement, leading to overstretching, exhaustion, and finally atrophy of the muscular structure of the uterosacral ligaments.

In our study of posterior displacements of the puerperal uterus it must now be clear to you that one of the four following conditions, or two or more acting together, are responsible for the great majority of these malpositions, *viz.:* First, increased weight of the uterus; second, softening of the uterine walls; third, increased intra-abdominal and faulty extra-abdominal pressure; fourth, loss of support. All posterior displacements, however, do not originate in the puerperal state. Increased weight and softening of the uterus may be caused by inflammatory changes other than those liable to follow a confinement, or may occur as a result of new growths in its walls, and thus cause displacements that give rise either to special symptoms, or aggravate the original disease, or, on the other hand, act the part simply of indifferent complications. Increased intra-abdominal pressure, the result of violent bodily jars or falls, may cause a sudden acute retroversion of the uterus, a condition attended with most distressing symptoms. The wearing of tightly laced corsets, and of heavy skirts suspended from the waist, primarily depress the uterus so that the cervix seeks the axis of the vagina, and by a change of the intra-abdominal forces in their relation with the body of the organ, it finally becomes retroverted or retroflexed. Chronic constipation, even by the action of the distended rectum upon the vaginal portion of the cervix, and the necessarily increased intra-abdominal effort during defecation, is likewise a potent factor in the causation of retrodisplacements. Any organic pelvic disease outside of the uterus may involve the organ in a displacement either by acting upon it directly or secondarily through the intervention of the circulatory, lymphatic, or nervous apparatus, thus effecting structural changes in the organ or its supports favorable to the production of a malposition.

A permanent retrodisplacement of a uterus otherwise normal, I repeat, is, anatomically considered, abnormal, because the former physiologic variations of position no longer obtain. It may become diseased because with the displacement of the uterus there is more or less displacement of ovaries and tubes and torsion of its lateral supports, the former, under these circumstances, being exposed to irritation from pressure involving the uterus; secondarily, while the distorted condition of the latter may offer a barrier to the return circulation, which, in many cases, is intensified by contact of these structures with the uterosacral ligaments, resulting in venous tension and enlargement of the organ, with consequent softening and infiltration of its structure. This may be still further aggravated by a bend in the uterine wall, thus, at the same time, contributing an additional source of irritation in a retention of uterine secretion above the point of flexion. In the presence of endometritis and metritis—necessary sequelæ of these pathologic changes — it is easy to conceive an extension of the disease process to the ultimate development of salpingitis, with tubal leakage, and the retinue of evils attending the various forms of pelvic inflammation, so that the uterus, though, in a certain sense, primarily at fault, may eventually play the part merely of an epiphenomenon engrafted upon more important pathologic lesions.

The Popularity of Lord Lister.—The *Medical Press* affirms that it is no more than the truth to say that at the present time Lord Lister is, from a public point of view, one of the most interesting members of the House of Lords. His personality has become a very popular one; everywhere those who formerly had scarcely heard of his fame have now learned the reason of the gratitude which humanity owes to him.

CLINICAL MEMORANDA.

A CASE OF HYSTERECTOMY FOR SEPTIC PUERPERAL METRITIS.[1]

BY JOHN OSBORN POLAK, M.D.,
OF BROOKLYN.

SUCCESSFUL hysterectomy for septic metritis during the puerperium is of sufficiently rare occurrence to warrant the record of this case.

Agnes S., aged thirty-three, born in Poland, was admitted to my service at the Eastern District Hospital, Brooklyn, January 14, 1897. She had had four children and three miscarriages. The last pregnancy resulted in a still-birth at term, four weeks previous to her admission. She was attended by a midwife in this labor, and fever followed. Her condition became so alarming after twenty-three days of septic toxemia that application was made for her admission to the hospital. Rigors had occurred several times each day.

Her general appearance was that of toxic anemia with emaciation, so characteristic in sepsis. There was dulness over the base of the left lung, with well-marked bronchial breathing over the same area. The sputum was mucopurulent, but did not contain Koch's bacilli. The abdomen was distended and tympanitic, with marked tenderness over the pelvic region, especially in the left iliac fossa. The fundus uteri could be palpated above the pubes for a distance of 3 cm. The pelvic floor was found to be torn in the median line, involving a few of the anterior fibers of the anal sphincter. The uterus was enlarged and fixed slightly back of the normal position by induration in each broad ligament. A thick, purulent discharge issued from the cervix, which was enlarged, softened, and lacerated bilaterally. The os was patulous and there was a marked ectropion of the cervical mucous membrane. The adnexa could not be satisfactorily palpated. Constant vomiting of grumous material accompanied by epigastric pain added gravity to the case. The evening temperature reached 102° F. with morning remissions, while the pulse was weak and fluctuated between 120 and 140 beats per minute.

The treatment was suppurative and stimulating with vaginal and intra-uterine irrigations of permanganate of potash solution. No benefit resulted, and after consultation hysterectomy was performed by the vaginal route on January 23, 1897. During the preliminary curettage the uterus was punctured anteriorly just above the internal os, the curette being distinctly appreciated in the uterovesical fold by the abdominal hand. Ligation of the uterine arteries was attempted, but abandoned because of the friability of the tissues. Hemastasis was obtained by the use of large clamps, the cervix was amputated, and the fundus retroverted through the posterior vaginal incision. This last step in the technic presented difficulties, owing to intraligamentous thickening and corporeal enlargement. Both ovaries were cystic, the cysts rupturing during the enucleation. The extreme vascularity of the parts greatly complicated the ablation, but the operation was completed in thirty-two minutes, the patient being in fair condition.

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[1] Read before the Obstetrical and Gynecological Section of the New York Academy of Medicine, March 24, 1897.

The temperature succeeding operation remained high for several days, reaching 104° F. on the fifth day. The clamps were removed in forty-eight hours. The intrapelvic gauze was allowed to remain *in situ* for five days, when it was withdrawn, the cavity irrigated and lightly repacked, after which the temperature fell to normal and the convalescence was uninterrupted. During the first twenty-four hours but one and one-half ounces of urine was secreted; suppression, though not in so extreme a degree, continued for the first week, during which time nitroglycerin and colon infusions of normal salt solution were very freely exhibited.

What I considered most remarkable was the fact that the infection had spread directly from the uterus into the broad ligaments through the lymphatics, while no involvement of the tubes had occurred after four weeks of sepsis. In my opinion the case illustrates the possibility of the occurrence of intraligamentous cellulitis from direct uterine extension, and demonstrates that occasionally the tubes play no part in pelvic inflammation.

REPORT OF THREE CASES OF GRAND HYSTERIA.

BY J. STEWART DOUBLEDAY, M.D.,
OF NEW YORK.

CASE I.—A. B., aged twenty-two, a law student, first came under my observation several months ago. He was a man of high intellectual gifts, was strong physically, and considerable of an athlete. There was a history of insanity in his family, and the knowledge of this fact weighed greatly on his mind, particularly as he felt that his own nervous failing was of a progressive nature. He was in constant dread that his trouble would ultimately lead to his confinement in an asylum. His attacks of hysteria were very peculiar, and although occurring irrespective of the ingestion of alcohol, the drinking of a glass of beer, or of a small amount of sherry wine, would be sufficient to induce an attack. The seizure could not in any way be confounded with one of delirium tremens. There would be great merriment, and his speech, usually of the most refined order, would become vulgar and profane. The exhilaration of spirits would be followed by a quarrelsome and delirious condition during which he looked upon every person as an enemy. Then he would become violent and it required several men to hold him. He would shout, scream, and groan. Semi-intentional clonic convulsions would occur in which the teeth were ground together. The pupils would strongly contract, and afterward become widely dilated. He complained at this stage of great pain, but was unable to locate it. At no time during an attack was the tongue bitten, nor was incontinence of urine or feces present. A condition of semi-coma followed the excited stage, which a cold douche speedily relieved. This was usually followed by vomiting. When relaxation was complete a large quantity of colorless urine was passed. During the attack the pulse-tension was high, but afterward it was low, and the temperature subnormal. No abnormal condition of any organ could be made out.

CASE II.—This was the case of a girl eighteen years old whom I saw at the Orange Memorial Hospital. She had been under treatment for some time for chlorosis, and when I saw her the hemoglobin percentage had risen from forty to eighty-five. The attacks of hysteria had decreased in number at first but afterward became more frequent, in spite of the fact that her general condition had greatly improved, and averaged about one a day. During the seizure, which usually occurred just after she had received some attention from the physician in charge, or when she had been especially noticed, she would moan at first for two or three minutes, then scream, and would apparently lose consciousness, the face becoming very pale, the pupils extremely dilated, or unequal, and the head rolling from side to side. The trunk, and upper and lower extremities would at first show a tonically convulsed condition, and irregularly choreic movements, and this would be followed by a very fine tremor of the whole body. Consciousness was restored without any intervening period of apparent coma. Very often she would "wake" only to have an immediate repetition of the attack. If she was left entirely alone the seizure ceased much sooner than when her condition seemed to cause anxiety or debate among those around. When the attack was over the usual "hysterical urine" was voided in very large amount. During the seizure nothing that was attempted seemed to exert any beneficial effect. The patient appeared to be totally unconscious and even when touched with the actual cautery, pricked with a needle, or when a slight incision was made (each of which was tried more than once) there would be no sensation of pain, at least so far as we could determine from movement, expression, or question. One day, by way of experiment, when the patient appeared to be truly unconscious and was undergoing clonic convulsions, with the widely dilated pupils above referred to, I took her hand and told her in a firm voice that if she did not get better of her infirmity she could never get married. The effect was immediate. A slight smile appeared at the corners of her mouth, the convulsions ceased, the pupils and expression became normal, and she was entirely conscious. I used this method twice with excellent effect. The therapeutic suggestion was one which Dr. Weir Mitchell had used in the case of a young woman engaged to be married and who was affected with intractable hysterical vomiting. In his case, however, there was consciousness.

CASE III.—I saw this case a week ago in private practice. The patient is a laundress, a young woman of twenty-five. She has suffered for three or four years from *grande hystérie*, the attacks coming on at the menstrual period. She has some dysmenorrhea, but in every other way is in good health, and is physically very strong. At no other time is she affected, and between the periods has no trouble whatever. The attacks are somewhat peculiar in being always preceded by a condition of malaise, which lasts for twelve hours, during which period the patient complains of pain which she cannot locate, and moans incessantly. This is followed by howling and screaming, apparent unconsciousness, and tonic, clonic, and tremulous conditions. In this case the eyes are always tightly closed.

I have now seen twelve cases of this disease, all but one of the patients being women, and I have always been impressed with the fact that the facies accompanying the condition is peculiar. It is very different from that met with in epilepsy, mania, or neurasthenia. The face is decidedly oval in shape, the chin is large but weak, the lips are heavy, the eyes are slow in movement, the brow is narrow, and the cheek bones are large. There is always a decided suggestion of sensuality in the expression.

During the attack the immediate employment of the hot and cold bath is to be highly recommended. The patient should be kept in each for two minutes, and then allowed to rest in warm or tepid water till complete relaxation obtains; she should then be put to bed and have perfect quiet. If the baths are not at hand, hot and cold douches are to be employed. Stimulants should be given only when needed. Vomiting usually occurs at this stage. If it does not occur it is well to induce it with a nauseous dose of oil, salt, or warm water. Afterward sulphate of magnesia should be given in one full dose. The curative treatment is too lengthy a matter to treat of here.

AN ANALYSIS OF 114 CASES OF MASTOID INVOLVEMENT COMPLICATING ACUTE MIDDLE EAR SUPPURATION.[1]

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I WISH in the first place to emphasize the fact that this article refers *only* to such cases of mastoid trouble as have accompanied *acute* middle ear suppuration, and does not include those not infrequent cases which run their course *without* suppuration in the tympanic cavity, nor the *chronic* suppurations.

Symptomatology.—Discharge from the ear in all of the 114 cases; pain (spontaneous) in 102; tenderness, either of the whole or some portion of the mastoid, most frequently the apex, in 101; posterior superior perforation of the membrana tympani in 52, of which 17 were distinctly pouting or teat-like; tinnitus of all kinds 56, of which 44 were described by the patients as being pulsating in character, the terms used by them being "puffing," "blowing," "beating," "hammering," etc.; drooping or bulging of the posterior superior canal wall into the lumen of the canal in 36, in 12 of which it was bulged so much as to entirely obstruct a view of the membrane. There was swelling over the mastoid, with or without a pushing of the auricle out from the side of the head, in 22 cases, in nearly all of which the swelling was present when I first saw them.

Etiology.—All the information that could be gained on this point is here shown:

"Colds," "colds in the head," "colds in the throat," etc.	24
"Sitting in a draught"	1
"Washing the head"	1
"Sea-bathing"	4
"Blow on the ear"	1
"Picking the ear with a hair-pin"	1
"Irritating drops in the ear"	1
Inflating the ear by the Valsalva method	1
Syringing the ear for cerumen	2
Nasal douche	3
Rötheln	1
Measles	1
Scarlatina	3
Grippe	21
No known or discoverable cause	49
Total	114

SEX.

Males	65
Females	49

AGE.

Under one year[1]	8
One to ten years	13
Ten to twenty years	12
Twenty to thirty years	27
Thirty to forty years	25
Forty to fifty years	11
Fifty to sixty years	11
Sixty to seventy years	5
Over seventy years[2]	2
Total	114

[1] Youngest, two months. [2] Oldest, seventy-five years.

The following table shows the diagnosis made in the different cases, together with the complications met with:

Acute middle ear suppuration, mastoiditis (uncomplicated)	76
Acute middle ear suppuration, mastoiditis, Bezold form	3
Acute middle ear suppuration, mastoiditis, secondary periostitis	19
Acute middle ear suppuration, mastoiditis, secondary periostitis, suboccipital abscess	1
Acute middle ear suppuration, mastoiditis, "mixed" middle and internal ear disease	2
Acute middle ear suppuration, mastoiditis, furuncle of canal	1
Acute middle ear suppuration, mastoiditis, erysipelas	3
Acute middle ear suppuration, mastoiditis, diabetes	3
Acute middle ear suppuration, mastoiditis, diabetes, erysipelas, and meningitis	1
Acute middle ear suppuration, mastoiditis, meningitis	2
Acute middle ear suppuration, mastoiditis, meningitis and cerebral abscess	1
Acute middle ear suppuration, swollen tender glands in the region of mastoid apex	2
Total	114

Out of the whole number of cases the result is unknown in	25
Recovery took place without operation in	26
Recovery (both ears affected) without operation in	8
Operation followed by recovery in	46
Operation (both ears) followed by recovery in	4
Total number of deaths	5
Total	114

The following details may not be out of place concerning the five patients that died:

CASE VIII.—I first saw this patient in consultation and recommended that antiphlogistic measures be carried out for forty-eight hours, when, unless the symptoms were greatly improved, the mastoid should be opened. Nothing further was heard from the case for six days, when the patient had well-marked meningitis, together with evidences of a secondary periostitis. To relieve tension an incision was made through the periosteum, but the disease had progressed too far during the delay to think of saving the patient's life.

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[1] Read before the American Otological Society at New London, July 14, 1896.

Case XVII.—I saw this man but once, in consultation, about three hours before his death, when operation was quite out of the question. It was an unrecognized mastoiditis, infection taking place through the inner mastoid table, with the development of a cerebral abscess, which was also unrecognized, and later meningitis.

Case XXXI.—This patient was a diabetic; he had an ordinary case of mastoiditis, which was operated upon, and he was apparently making a good recovery, when a violent attack of erysipelas supervened, followed shortly by meningitis and death.

Case LXXXIX.—This was another case of partial recovery after opening the mastoid, the patient having done perfectly well for ten days, when, owing to unfavorable surroundings, she too developed facial erysipelas, for which it was necessary to remove her from my care to the Flatbush Hospital, where she afterward died.

Case XCVI.—In this case the mastoid symptoms came on with great violence as an accompaniment of a recurrent middle ear suppuration. The mastoid was opened just three and a half days after the onset of the middle ear inflammation, death from meningitis taking place three and a half days later. The intracranial inflammation must have started very soon after that in the ear to have run such a rapid course, and the question arises in my mind whether this may have been one of those exceptional cases with a bony hiatus in the roof, either of the tympanic cavity or the mastoid antrum. Unfortunately, an autopsy was not allowed.

A summary of the cases is as follows: (1) For opening the mastoid the gouge or chisel has been invariably used, excepting only those cases in which the cortex was so much softened as to make the sharp curette more applicable. (2) For clearing out the mastoid, sharp curettes were used for the outer, blunt curettes for the deeper, portion. (3) *Grippe*, outside of the acute affections of the nose and nasopharynx due to cold, etc., has played the most important rôle in the the etiology. (4) The symptoms are important in about the following order: (*a*) pain, either in the mastoid or in some part of the affected half of the head; (*b*) tenderness, either of the whole or of some part of the mastoid (oftenest of the apex); (*c*) drooping, or bulging, of the posterior superior canal wall into the lumen of the canal, especially if this is near the membrane; (*d*) posterior superior perforation of the membrane, especially if pouting or teat-like; (*e*) pulsating tinnitus, when it continues as a marked symptom after the time it should have ceased, were the case one of simple middle ear inflammation; (*f*) the external symptoms—redness and edema of the mastoid, and pushing outward of the auricle. (5) Abortive measures should be employed in a majority of cases for from two to five days, and will, as my cases show, be successful in curing a fair proportion of all cases. Having failed to give relief after the judicious use of abortive treatment, I believe the following may be justly given as the remainder of my conclusions: (6) We must time and again operate on the strength of one or two symptoms, and often with even these only slightly marked. (7) If a patient is seen before the external manifestations of mastoiditis have developed, we should never wait for their appearance, because by so doing we give the pus the same opportunity for breaking through the internal, as through the external mastoid cortex, the patient's life being meantime jeopardized to just that extent. (8) The operation, if performed with due care, is relatively free from danger. Danger to the patient arises, not from the operation, but from delay in performing it. (9) Finally, my cases make me believe that a pretty safe general rule would be, *when in doubt, operate*.

The following cases will, perhaps, demonstrate some of the difficulties of diagnosis and a few of the unusual complications met with, and at the same time make clear the dangers that would have accrued from waiting for the development of the external symptoms of mastoiditis.

Case VII.—Acute middle ear suppuration; mastoiditis; operation; recovery. Indications for operation: Severe pain, slight pulsating tinnitus, very slight tenderness. These seemed to me very slight indications, and yet the whole mastoid was found to be gutted out into one enormous cavity, and the inner mastoid cortex had entirely disappeared over a space as large as a 25-cent piece. On probing over this area, the membrane was so much softened that the probe, almost of its own weight, penetrated the lateral sinus, resulting in the escape of a large amount of dark, grumous blood. The hemorrhage, however, was easily controlled by pressure. The patient had a chill on the fourth day, after which recovery was uninterrupted.

Case XXV.—Eczema of the external auditory canal; acute middle ear suppuration; mastoiditis; operation; recovery. Indications for operation: Long-continued, profuse discharge, with a suspicion of mastoid tenderness. This case was first treated for eczema of the canal, without perforation; then perforation occurred, as I always thought, from without inward; later, an acute middle ear suppuration developed, all the symptoms of which subsided, excepting that a very profuse discharge continued. Finally, after waiting a full month for the discharge to cease, and with this and the slightest suspicion of mastoid tenderness as the only indications, I operated and found a large quantity of pus and a very necrotic mastoid. From this time the patient recovered rapidly.

Case LXVI.—Acute middle ear suppuration; mastoiditis; operation; recovery. Indications for operation: Pain, tenderness, and drooping of the posterior superior canal-wall. This case is peculiar in its apparent etiology. The patient's ear was syringed for impacted cerumen, whether violently or not I do not know, after which for two days there was much relief; then the ear commenced to pain violently, followed after two days by a discharge, which, with the pain, continued until I saw him two weeks later. At this time there was marked mastoid tenderness, with decided bulging of the posterior superior canal wall, which, with the continued pain, were sufficient in my judgment to indicate operation, which was performed at once, showing much pus and granulation tissue in the mastoid cells. Whether or not the mastoiditis bears to the syringing of the ear for cerumen the relation of effect to cause, I do not know, but careful inquiry failed to elicit anything else as a probable cause.

CASE LXXIV.—Acute middle ear suppuration; mastoiditis; operation; erysipelas; recovery. Indications for operation: Pain, tenderness, pulsating tinnitus, beginning drooping of posterior superior canal wall, and posterior superior teat-like perforation. This case was, to me, unusual, in that it was the first in the negro race on which I had been obliged to operate in this way. The mastoid cortex and the apex were about as in most cases. Above the apex, and considerably posterior to the bulge of the inner cortex marking the location of the sinus, was quite a large cavity (one-half inch deep) filled with granulation tissue and pus. In front of the sinus prominence there was but little space through which to get to the antrum, and while working in this direction the sinus wall was exposed for a space about one-third of an inch square. Finally, the posterior wall of the bony canal had to be chiseled away, after which a very small antrum was found, filled with granulation tissue. Another complication, due to the black skin of the patient, and new to me, was the difficulty in determining during the first two days what the attack was, which later proved to be erysipelas.

CASE XC.—Acute middle ear suppuration; mastoiditis, Bezold form; operation; recovery. Indications for operation: Pain, tender swelling below the mastoid apex, loud beating tinnitus, and marked drooping of the posterior superior canal-wall. This man, when I first saw him, had a large, red, hard, board-like swelling extending from the mastoid apex downward two and one-half to three inches under (internal to) the sternomastoid muscle. The mastoid was opened and cleared out. A perforation of the tip was found, and through this a probe was passed under the sternomastoid coming to the surface along its posterior border. Using this as a guide to cut down upon, a counter opening was made, and a drainage tube passed through the perforation at the mastoid apex, under the muscle, and brought out through the lower opening. The swelling did not extend any further downward, and the patient rapidly recovered.

CASE CIV.—Acute middle ear suppuration; mastoiditis; operation; recovery. Indications: Pulsating tinnitus (very annoying), tenderness, not of, but posterior to, the mastoid, and a numb feeling of the affected half of the head. This case was in a nursing mother, and at first seemed an inflammation of the tympanic cavity only, with every evidence of recovering; after about two weeks, however, she commenced to complain of a very annoying "beating" tinnitus, the discharge continuing. Later, tenderness appeared, but was never more than slight, and was always localized posterior to the mastoid process. The next symptom of which the patient complained was a numb feeling of the affected half of the head. Pain was never present to any considerable extent. Operation showed about half a dram of pus in a cavity running back between the tables of the skull into the occipital bone. Recovery uneventful.

CASE CVIII.—Otitis externa hemorrhagica; acute middle ear suppuration; mastoiditis; operation; recovery. Indications: Pain in the parietal region, pulsating tinnitus (very troublesome), and tenderness immediately below the auricle. When first seen the canal was entirely blocked by two large hemorrhagic extravasations on opposite walls. These were punctured, and the membrane seen not to be perforated, though much inflamed, a small perforation appearing later. The pulsating tinnitus, which was one of his first symptoms, continued until after the operation, six weeks from the time I first saw the patient, and that, with an obscure, not very severe, pain high up in the parietal region, was about the only evidence of continuing trouble until a few days before I operated, when marked tenderness appeared close under the auricle in front of the mastoid. Finally, with much doubt as to the findings, operation was undertaken. The superficial cells, the cells toward the antrum, and those toward the apex, were normal, and I was beginning to think that I had for the first time opened a mastoid unnecessarily when, on going further inward and downward in the apex region than I had ever done before, apparently internal to the digastric groove, about a dram of pus was found. After this recovery was uneventful.

CASE CXIII.—Acute middle ear suppuration; mastoiditis; operation; recovery. Indications: Tenderness, pulsating tinnitus, drooping of the posterior superior canal wall, and posterior superior pouting perforation. The two or three points worthy of mention are, (1) the tenderness, which was only moderate, and was located very far posteriorly, the apex and body of the mastoid being entirely free from it; (2) the pain during the four weeks previous to the time the patient came to me had almost entirely subsided, yet in spite of his slight symptoms, the pus cavity in the mastoid was found to be in direct contact with the wall of the lateral sinus over a space half as large as a 25-cent piece. Recovery was unusually rapid.

MEDICAL PROGRESS.

Post-Febrile Insanity.—HODGDON (*Maryland Med. Jour.*, March 27, 1897) does not take as gloomy a view of the prognosis of post-febrile insanity as do most alienists. He has found that full sedative doses of bromid of soda, if given in conjunction with tonic treatment, nourishment, and stimulants as soon as the earliest symptoms appear will succeed in most cases. If the patient can afford both a day and a night attendant, he is much better off outside of an asylum than in one.

Disinfection of Books in Circulating Libraries.—Owing to the possibility of infection by means of books obtained from circulating libraries, numerous attempts have been made to find some cheap, quick, and satisfactory method for their disinfection. The latest of these attempts is described by SCHAB in the *Centralblatt f. Bacteriologie*, February 6, 1897. His experiments were made upon books infected with pyocyaneus, staphylococcus, aurus, anthrax, and tubercle. As disinfectants, sulphurous acid gas and formaldehyde were employed. The sulphurous acid gas was able to kill pyocyaneus in twenty-four hours. The other bacteria, in many instances, were not affected by exposures of forty-eight hours, even when the books were previously moistened. Results with formaldehyde were even less satisfactory. It is evident that books, because of the close contact of their leaves, which are often made of a glazed paper, offer a great resistance to the penetration of gases, and must ever remain among the most difficult of all objects to sterilize.

General Therapeutics of Infectious Diseases.—ROBIN (*Bull. Gen. de Therapeutique*, February, 1897) finds, in infectious diseases, that the toxins diminish the power of the red blood cells to carry oxygen. Thus the power of oxidizing the waste materials and bacterial products is lessened. The kidneys and other emunctory organs are also rendered less capable of performing their functions, so that there occurs an increase in the solids, toxins, waste materials, etc., of the blood and a diminution in the solids, urea, and other products of oxidation eliminated in the urine.

In febrile affections, typhoid, for example, the gravity of the disease is in proportion to the amount of unoxidized materials in the blood, and is indicated by a decrease in the urinary solids. Thus the chemical examination of the urine is a valuable means of making a prognosis. Even when the general symptoms are favorable, if on examination the urine is found to contain a marked decrease in the solids, the condition may be considered serious, and *vice versa*.

A New Method of Obtaining Urine from a Single Kidney.—In the *Centralblatt f. Gynakologie*, February 6, 1897, ROSE describes a method of obtaining urine from a single kidney. In order to accomplish this purpose, which is often of great importance diagnostically, various measures have been proposed. Pressure upon one ureter, either bimanually or through the vagina, or by means of a special clamp, is an uncertain procedure. HEGAR proposed to cut down upon the ureter through the vagina and stop for a time its flow of urine. This method is certain, but is in itself an operation. By means of the cystoscope it is sometimes possible to determine that the urine from one ureter contains pus or blood, while that from the other is clear. At times this distinction is made with difficulty, or not at all, and in the most favorable cases no information is gained as to the chemic or microscopic condition of the urine. The catheterization, as proposed by Nitze and Kelly, requires considerable practice, expensive apparatus, and often an unpleasant dilation of the urethra. Rose's procedure is based upon the fact that the bladder of a woman in the knee-chest position, or with the pelvis elevated in the dorsal position, will distend with air if a speculum is introduced through the urethra. Through this speculum it is possible to see by direct or reflected light the openings of the ureters; and if the speculum is cut obliquely, its inner extremity; it may be clamped over one ureter, while the urine from the other ureter flows down over the posterior bladder wall toward the umbilicus. When sufficient urine for examination has collected in the speculum it can be drawn into a syringe, the speculum be withdrawn and cleansed, the bladder irrigated, emptied, and again distended with air, and the speculum placed over the mouth of the ureter of the opposite side. In cases of extreme sensitiveness the use of cocain is recommended. As the urethra is not dilated, narcosis is unnecessary, and a resulting incontinence of urine is not to be feared.

Relations of Nervous Disorders in Women to Pelvic Disease.—WIER MITCHELL (*University Magazine*, March, 1897), while admitting that nervous diseases in women brought about by abnormal conditions of the pelvic organs are often cured by surgical measures, still warns against too great a reliance upon surgery alone. A great many aggravated cases of hysteria have disease of the pelvic organs, which is so apparent as to make recovery by the removal of the ovaries and tubes seem probable. A large percentage of these cases are not made better by operation, but, on the contrary, often made much worse, or else gain nothing on the side of the neurosis. Hysteria is not a disease of sex, and it is not often cured by oophorectomy alone, even if justified by physical disease. The success of a surgical operation would be far greater if the women had prolonged preparative rest treatment. Usually a year passes after operations of the nature under discussion before full health can be expected.

The writer is inclined to think that post-operative traumatic insanities are the more common after pelvic operations than after others. It is apparently sometimes due to the anesthetic, since twice in his knowledge it has followed operations of a trivial nature.

A Case of Sudden Decoloration of the Hair.—FÉRÉ relates in *La Progrès Médicale*, January 23, 1897, a case of partial canities occurring very rapidly. The possibility that the hair should suddenly turn white has been denied on physiologic grounds by some dermatologists, notably Kaposi, but it is, nevertheless, supported by numerous well-authenticated instances. The case which came under Féré's observation was that of Mrs. B., who was at one time treated by Charcot. At that time she experienced after the lightest repast intense pain and a revulsion at the idea of food. She became extremely emaciated, the skin became dry, and the extremities cold and senseless. There were also disturbed sensation and various other phenomena. Forced to take nourishment through a tube these symptoms rapidly disappeared, and in a short time she was perfectly well.

She married and had four children. Four years after the birth of the last child she stopped one day in the middle of the street, while on the way home, believing she had forgotten something. Suddenly perceiving a stage coming toward her—though not near enough to place her in any danger—she rushed into the nearest house and fell into a chair in a state of extreme agitation. Having recovered a little of her self-control, she returned home and slept well that night. The following day she merely noticed that her menstrual pain (for this happened during her catamenial period) was greater than usual. On the next day—*i.e.*, the second after the accident—she observed that a lock of hair on the right side of her head had lost its color. The hairs were totally decolorized throughout their whole length; otherwise they were unchanged in character. The area from which they sprang measured eighteen by twenty-two millimeters. The skin was not hypersensitive or in any way abnormal, except that in its center there was a small V-shaped scar, which was not painful, and was not adherent to the skull. The rest of the hair had its usual brown color.

So-called Spider Bites.—DAVIDSON, in an article on this subject printed in the *Therapeutic Gazette*, February 15, 1897, expresses the opinion that many of the infectious bites attributed to spiders are not caused by these insects. Several naturalists have allowed themselves to be bitten by the largest poisonous spiders without serious result. It is doubtless true that, nevertheless, certain people are especially susceptible to spider bites as they are to bee stings. Some people have died of collapse half an hour after the receipt of a bee sting.

Many of the cases of so-called spider bites are thought by Davidson to be caused by the pirate bug (*Rhasahus Biguttatus*, Say). The bite of this insect is usually followed by local cellulitis with a central dark spot around which there frequently develops a bullous vesicle about the size of a 10-cent piece and filled with a dark grumous fluid. In a few days, with rest and under the application of wet antiseptic dressings, the cellulitis resolves.

THERAPEUTIC NOTES.

Peronin for Cough in Phthisis.—SCHROEDER extols in the February number of the *Therap. Monatshefte* the virtues of Peronin to quiet the cough in phthisis. He administered it for a considerable time to twelve patients in doses the same as those of codein phosphate with which it was compared. The plan was to administer the peronin in gradually increasing doses, beginning with the third of a grain and increasing up to twice that quantity. In eight cases the irritation from the cough was at once relieved. In two it was relieved with larger doses only, while two patients were not benefited at all. On the character and amount of expectoration the drug had little influence. All the patients obtained a better and quieter sleep. In two there was on the following morning headache and general malaise, while two complained of nausea and constipation. These are symptoms which often follow the administration of morphin, of which peronin is a derivative. Schroeder looks upon this remedy as holding a middle ground between morphin and codein, and considers it worthy of a further trial. It is capable of giving relief, but not, of course, of curing the cough, and is therefore to be classed with other narcotics as one of the reserve methods of treatment.

Influence of Cold Baths in Delirium Tremens.—LETTULE (*Centralbl. für Ges. Ther.*, January, 1897) recommends as a sedative in delirium tremens a cold bath of 65° F., the patient being immersed in the water to his shoulders, while water of the same temperature is poured over his head. In a severe case in which large doses of morphin subcutaneously and chloral by the mouth had failed to give sleep in two days and death was expected, a bath of the temperature of 65° F., increased in the first three minutes cyonosis and excitement. In six minutes the aspect of the patient completely changed. His excitement disappeared, he seemed to awake from a dream, asked where he was, drank eagerly two glasses of warm wine, and wanted to sleep. He was placed in bed and immediately fell asleep. The following day, on account of recurring excitement, it was necessary to repeat the bath four times. There was no further delirium and the patient recovered. In a second case it was necessary to leave the patient twelve minutes in the bath, when as suddenly as before there was quiet, thirst, and a desire for sleep, followed by complete recovery in two or three weeks.

For Obstinate, Acute Intestinal Catarrh.—

℞	Resorcin		grs. lxxv
	Bismuth salicylate Tannigen	aa	℥ ss.
	White sugar Sodium carbonate	aa	ʒ ii

M. Ft. pulv. Sig. small, even teaspoonful every two hours.

—Ewald.

For the Severe Constipation of Dyspeptics.—

℞	Podophyllin		grs. v
	Ext. of nux vomica Ext. of calabar bean	aa	grs. vii ss.
	Ext. of gentian Licorice powder	aa	q. s.

M. Ft. pil. No. XXX. One pill twice daily.

—Einhorn.

Pruritus Treated by Salophen.—WANNEMACKER (*Wien. Med. Blät.*, March 4, 1897) has obtained good results in the treatment of pruritus from the use of salophen in doses of dram daily. In some cases a cure was effected in one day; in others, it was necessary to continue treatment for a week. Some of the patients had suffered for years, and had tried various remedies without benefit. Cases of eczema complicated by obstinate itching were also improved by this treatment.

Guaiacol in Puerperal Eclampsia.—In the *Boston Med. and Surg. Jour.*, March 18, 1897, APPLEBY speaks of the use of guaiacol in two cases of puerperal eclampsia with happy results. Each patient was a primipara. In one, the convulsions had come on during the third stage; in the other, after delivery. In both the convulsions were powerful and almost continuous. Forty or fifty drops of guaiacol were poured upon the abdomen and gently rubbed in. In a few minutes the pulse became soft, free diaphoresis set in and the convulsions ceased. Both patients recovered perfect health without further convulsions. If these had recurred the writer would not have hesitated to use guaiacol the second time.

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SATURDAY, APRIL 24, 1897.

KOCH'S IMPROVED TUBERCULIN.

ATTENTION has been attracted with renewed interest to Prof. Koch and his work in connection with tuberculosis by an article of his which appears in the last issue of the *Deutsche Medicinische Wochenschrift.* In this article Prof. Koch points out the fact that the comparative lack of success in procuring an efficient antitoxin from the tubercle bacillus is due to the circumstance that this particular germ is exceedingly tenacious of his products, and does not readily give them up to the tissues. This micro-organism, when injected subcutaneously in gradually increasing doses, as is done with the diphtheria bacillus, does not develop antitoxin in the blood in sufficient quantity to be used for therapeutic purposes as does the latter, but harbors his own resources within himself, and goes forward with his destructive work. In exceptional cases, however, sufficient antitoxin is developed to counteract the toxins, and these cases recover.

It becomes necessary, therefore, to devise some artificial means of compelling the bacillus to give up those products which are essential to the development of the antitoxins. At first the active elements were extracted from the bacillus in glycerin and evaporated by heat. This was the original method of procuring tuberculin. This proved only partially efficacious, as is well known, and was open to the objection that injections of it were apt to cause abscesses. It, however, had sufficient virtue to be recognized as a reliable diagnostic test, not only in cattle, but more recently in man at so early a stage of tuberculosis that clinical observation and physical examination were not yet of any avail.

Inspired by this success, and sustained by his faith in the great principle of antitoxin therapy, Prof. Koch continued to study the elements of failure, as well as of success. He reached the conviction that in his process of extraction, the characteristic properties were partially destroyed by the chemical processes and by the heat, and that the solution of the dead bacilli was the cause of the abscesses. By a careful system of staining he found that the bacillus is possessed of an integument which, doubtless, protects it from external attacks, and renders absorption and assimilation of it difficult. It became necessary, therefore, to destroy this integument. After many futile attempts to accomplish this by methods which would not destroy the characteristic properties, Koch conceived the idea of grinding the dried bacilli in a mortar. When well-dried cultures were taken and worked about for a long time in an agate mortar, without any admixture, it was seen that the bacilli gradually lost their contour, and became reduced to a powder, and that, finally, only a few remained. In order to remove these, Koch diluted the substance thus obtained with distilled water, and clarified it by means of a very powerful centrifugal machine which made 4000 revolutions in a minute. The fluid was in about half an hour divided into a whitish, opalescent, but quite transparent, upper layer, which contained no more bacilli, and a muddy sediment sticking fast to the bottom. The latter was again dried, then triturated in the mortar, dissolved and clarified by the machine, and separated as before. This manipulation was continued till finally nothing remained but a series of completely clear fluids.

To secure all the toxic properties in their most active form only the fresh, living, most virulent cultures are used, the bacilli being taken from the surface of the culture-broth and dried by the vacuum process. At first Koch convinced himself by experiments on animals and, later on, on human beings, that the preparations so gained were all completely "resorbable," and never caused abscesses. It was further shown that though the first fluid differed considerably from the others, they all produced similar effects.

With this preparation experiments have been made on animals and man, both for immunizing purposes and for cure in the early stages of tuberculosis. Results have been most satisfactory. It is evident that the improved tuberculin is much better than the former preparation, although Koch modestly asserts that he does not believe it to be ultimate perfection; in other words, it is capable of still greater improvement.

ANTISTREPTOCOCCIC SERUM.

In this age of serotherapy it is not surprising to find a remedy of this character offered against streptococcic infection, which hitherto has carried such a heavy mortality rate. Foreign and home journals teem with reports of cases where the antistreptococcus serum has been used, and the difference of opinion as regards results obtained is most marked. Fully as many observers report failure as success, and it becomes a matter of difficulty to decide—even granted that the time is ripe for the expression of decided opinion—whether this serum, so vaunted by some, is, after all, of any utility whatsoever.

At the outset, observers appear to have forgotten two very important points: In the first place, the serum, if efficacious at all, is only so in the presence of the streptococcus; and in the second place, even though the infection be due to the streptococcus, if it be localized, or if operation be performed before lymphatic, systemic absorption occur, the case will very frequently recover without utilization of the serum. Further still, current literature contains reports of cases of what is termed puerperal sapremia which have recovered through the use of the serum plus resort to the usual surgical measures, and yet the open fallacy is that similar cases constantly recover through curettage and drainage without the serum. On the other hand, we find instances recorded in which, notwithstanding surgical measures of the most radical type, the cases were progressing from bad to worse, when the use of the serum altered the prognosis absolutely. Little wonder, then, that enthusiasm causes certain observers to contend that they have found a specific against streptococcus infection, and insist that in every case in which we have reason to expect such infection the serum should be administered as an *immunizing* agent.

From a careful study of a large number of reported cases, it would seem to us that so far the verdict of "not proven" must be rendered. Frequently the temperature has fallen, the heart action has improved, and the eliminative power of the kidneys has been bettered through the use of the serum; but in probably as many instances no appreciable change in the subjective phenomena has been obtained, and in one instance at least the serum apparently caused grave lesion of the kidneys. And yet, to be absolutely fair, in the latter instance no one is in a position to say that the disease itself—septic infection—was not responsible for the renal involvement.

If, as is contended, the injection of the antistreptococcic serum is followed by increased leucocytosis and consequent phagocytosis, we are possibly on the verge of the discovery of an agent of untold therapeutic value, since it will follow that, given a serum effective against one germ, there is reason to expect the discovery of serums effective against other septic germs. Our apparent lack of success up to the present time may be due to imperfect or insufficient administration of the serum. Probably the safe plan for practitioners to follow is that of never neglecting those early and radical surgical measures which at times save even an apparently hopeless case, and at one and the same time to utilize a serum obtained from a reliable source and free from extraneous substances, such as carbolic acid, on the ground that it is hardly likely to do harm and may do a world of good. Certainly the accredited standing secured by other serums, notably the antidiphtheritic, should lead us to avoid pessimism in regard to the value of other varieties of serum, even though we apply the scientific curb to our enthusiasm.

ECHOES AND NEWS.

State Aid for a Medical School.—A bill before the Texas Senate appropriates $42,000 annually for the medical department of the State University.

A Civil Service Appointment.—Arthur J. Caperon, M.D., of Rochester, has been appointed from the civil service list junior physician at the Manhattan State Hospital, Randall's Island.

Dr. William H. Thomson Resigns.—It is announced that Dr. Thomson has resigned from the Chair of Practice of Medicine in the New York University.

The Medical College of Ohio.—This institution held its Seventy-eighth Annual Commencement exercises on April 9th, and graduated one hundred and eleven students.

Doctors as Lawmakers.—The recent general election in Italy resulted in the return of forty members of the medical profession to the Italian Parliament, many of them occupying leading positions.

Two French Doctors Punished.—Drs. Boisleux and De la Jarrige, of Paris, who were convicted recently for having murdered an English girl by an operation for procuring abortion, have each been sentenced to five-years' imprisonment.

Cerebrospinal-Meningitis in Boston.--Fifty cases of this disease have been reported to the Board of Health at Boston during the past thirty days. The cases are said to be found in all parts of the city, and among all classes of people.

Why Fashions in Surgery Change.—The quotation from Mr. Lawson Tait in our last issue should read: "The absence of *inquiry into* secondary results is the cause of so much change of fashion in surgery, to say nothing of medicine."

American Academy of Medicine.—The Twenty-second Annual Meeting of this Society will be held in Parlor "C" of the Continental Hotel, Philadelphia, on Saturday and Monday, May 29 and 31, 1897. The advance program announces discussions on about all the ethical questions ever dreamed of in medicine.

Vegetarians in England.—Advanced vegetarians in England have formed an association, binding themselves to eschew not only animal food, but also all articles composed in any degree of substances involving the death of animals. This includes leather for shoes and gloves, fat for soap, ivory, skins, and feathers.

An Englishman's View.—An Englishman, who signs himself in the *Lancet* "A British Exile," and who has evidently been investigating the hardships endured in the pursuit of a medical education and practice in America, says: "To the English medical man who has ideas of starting for this field there is only one good piece of advice—'Don't.'"

Dr. Biggs of New York Honored.—Dr. Herman M. Biggs has been selected to deliver the Address on Public Medicine before the British Medical Association at its meeting in Montreal. We can justly regard it as a most flattering tribute to American medicine that two of the three men selected to deliver general addresses before the Association have been chosen from the United States.

A Woman Graduate at Vienna University.—Vienna University has accepted the inevitable and granted the degree of Doctor of Medicine for the first time to a woman, the Baroness Possauer von Ehrenthal, who recently was admitted to practice in Austria after passing the requisite State examination. She had received the degree from Zurich many years before.

Hard Times as a Preventive of Sickness.—The *Canadian Journal of Medicine* has discovered that a reasonable explanation of the hard times theory of exemption from sickness is that a long, strong dose of misfortune is either a powerful tonic to the brain and nervous system, or a depressing influence which leads to despair and suicide.

Medical Inspectors for Industrial Schools.—It is proposed to extend the system of medical inspection recently introduced into the public schools of New York so as to include the industrial schools in charge of the Board of Education, as well as those under the supervision of the Children's Aid Society. There are twenty-three industrial schools in the city, with 6354 pupils.

House of Refuge in New York Quarantined.—The House of Refuge on Randall's Island was recently found to contain a large number of cases of trachoma, as well as a general epidemic of measles, and has been quarantined by the Board of Health, careful isolation being established among the inmates. The Finance Committee of the State Senate has voted to allow an appropriation of $32,700 for the sanitary improvement of the buildings.

New Building for the Hospital for Ruptured and Crippled.—Plans were filed recently with the New York Building Department for the addition to the Hospital for the Relief of Ruptured and Crippled. The new structure will occupy the entire northern part of the block between forty-second and forty-third streets and Lexington avenue. The new building will cost about $250,000. Work has already begun.

A New Hospital in Washington.—A hospital for the treatment of the eye, ear, and throat has just been established at the corner of Seventeenth and L streets. The attending physicians are Drs. William H. Fox, William H. Wilmer, Franck Hyatt, E. Oliver Belt, T. Morris Murray, and J. H. Bryan. The consulting board is composed of Drs. Samuel C. Busey, J. Taber Johnson, J. F. Thompson, W. W. Johnston, N. S. Lincoln, and J. W. Bayne. A graduate of Bellevue Hospital training school has been secured as superintendent.

The Nurses' Settlement.—It is often said that only the very rich and the very poor can command the services of a trained nurse. The Nurses' Settlement of New York, established about five years ago in Henry street, has proved beyond question that the services of a trained nurse are also within the reach of wage-earners. The plan is to send a nurse to a patient for one, two, or three hours, as the circumstances may require. In this way she can see several patients in a day. The fee charged is thirty cents an hour.

The Health of New York City.—A report of the Board of Health shows that the death-rate of the city for the first three months of this year is lower than it ever has been for corresponding periods in many years. The following table shows the comparative number of deaths and the comparative death-rate for the first quarter of each year since 1891:

Year.	No. of Deaths.	Rate.
1891	10,214	24.99
1892	11,458	27.23
1893	11,844	27.33
1894	10,976	24.63
1895	11,728	25.34
1896	10,949	22.96
1897	9,957	20.31

Smallpox in New York.—The eighteen cases of smallpox which have made their appearance in this city since March 1st, have increased the work of the medical inspectors in the Bureau of Contagious Diseases of the Health Department to such a degree that it has been found necessary to increase the staff temporarily, so that the work of examination may be expedited. In each of the eighteen cases a medical inspector has been assigned from the regular staff to keep a strict daily watch on the house from which the patient was removed, and in consequence of this the regular corps of vaccinators has been diminished to that extent. In every case of smallpox reported inspectors are at once sent to vaccinate the persons living on the four sides of that block, and also on the four sides of the adjoining block. The disinfecting corps has been kept busy as well.

Doctors Held for Blackmail.—It is reported that Dr. J. W. Prendergast, Health Officer of Cincinnati, and Dr. Ovlimerick, after a hearing before Magistrate Winkler lasting nearly a week, have been bound over in $1000 each to the Grand Jury on the charge of blackmail preferred by H. N. Fraser of the Fraser Tablet Co. of New York. The Tablet Company charges that the Health Officer at first demanded $10,000, claiming that the tablets were impure or short in strength, and that the Pure Food Commission would consequently prohibit their use by the Health Department. This fact, on being noised abroad, would work the company injury. The sum demanded, according to the Tablet Company, was finally reduced to $2000. The company denied that the tablets were not as represented, and caused the two doctors' arrest.

Tuberculosis in Massachusetts.—As the result of a recent investigation made in Massachusetts by the legislative Committee on Public Health, a statement has been prepared, explaining how consumption is propagated and how best it may be combated. The document contains nothing new, and is notable only because of the emphasis with which it advocates the segregation in special colonies of all sufferers from the disease whose circumstances are such that they cannot receive at home the sort of care that will prevent them from being dangerous to the community in which they live. It is recommended that these patients be placed in suitable hospitals or homes, in localities where the air is dry, where outdoor life is possible during the greater part of the year, and where they would not imperil the safety of other people. This suggestion is signed by two professors in the Harvard Medical College, by the Chairman of the Boston Board of Health and Park Board, by the medical examiners of Suffolk County, and by the chairman or medical member of sixteen other towns and cities in the State.

Mr. Roosevelt's Opinion of the New York Board of Health.—The *Evening Post* quotes the retiring Police Commissioner as follows: "As President of the Board of Police, I have been a member of the Board of Health, and it has been a real pleasure to work with three such men as Mr. Wilson, Dr. Fowler, and Dr. Doty, and to have some small part with them in rendering the invaluable service to the city which they have rendered. During the entire two years I have never known them to take one step that was not dictated solely by an earnest desire to benefit the public, and to do in the best possible manner work which it was necessary to have done. The work which they have done toward eradicating those noisome pest-houses, the rear tenements, is of such far-reaching importance that people can form but a faint idea of it. The work of the board in regard to tuberculosis, steadfastly pursued in spite of all clamor, the effort to get pure milk for the people, to secure proper sanitary conditions in tenement houses, and the crown of it all, I am tempted to say, the medical inspection of schools, just begun by the board—all these are illustrations of the various kinds of work which go to make up the splendid record of efficiency of the department. It has been a pleasure to work with a department presided over by so admirable an executive head as Mr. Wilson, and to be able to second and speed the efforts of his colleague, Dr. Fowler, and himself."

Obituary.—Dr. Francis Wilhoft, sixty-two years old, a well-known physician and inventor, died at his home in New York, April 12th, after a brief illness. He was born in Germany, and was graduated with high honors. He came to this country in 1857, and settled in New Orleans where he built up a large practice. In 1880 he came to New York City, and two years later became interested in a new process for working and vulcanizing rubber, and retired from practice, devoting his whole time to this work. He was a frequent contributor to foreign medical journals. He leaves a wife and five children. The body was cremated at Fresh Pond, L. I.—Dr. Andrew Otterson, an old-time Brooklyn physician, died suddenly April 15th, at his home, in Brooklyn, of heart disease. He had been ill for several days, and appeared to be in a fair way of recovering, when he was stricken. Dr. Otterson was born seventy-five years ago in Montgomery County, N. Y. He was graduated from the University of the City of New York in 1844, and removed to Brooklyn, where he practised without intermission until his death. In 1874 he was appointed Health Commissioner, and was reappointed in 1878, and again in 1882.—Dr. Charles M. Shields died in Richmond, Va., April 16th. His death was from tuberculosis, contracted from a patient whom he treated. This fact attracts very general interest among the medical profession. Dr. Shields enjoyed one of the most lucrative practices in Richmond, although only thirty years old.

CORRESPONDENCE.

THE MEDICAL APPRENTICE.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: Your excellent editorial on "Ethics in Medical Schools," which appeared in the issue of the MEDICAL NEWS of March 13th, is timely, and to the point. If a "reversion to the old apprenticeship system is impracticable," as you say, something equally as good might be suggested.

The personal equation is so important to a successful practice, that it ought to be taught in some way. The terms "apprentice" and "apprenticeship" smack too much of *trade* to be agreeable to a professional man, but the old term, "articled pupil," might be used to express the status of the medical aspirant.

Before matriculating at a medical college, every medical student should be required to serve one year in a physician's office, in order to secure just the advantages described in your editorial. For this privilege, $50 to $500 might fairly be demanded by the preceptor for his services for training, use of office, wear and tear of books, etc.

An American youth of seventeen or eighteen years of age should be able to acquire, by that time, a fair English education (including a reading knowledge of French and German) or the equivalent of an A.B. course, and this, with a four-years' course in medicine (including one year of hospital work), should fit a young man for medical practice at as early an age as it would be prudent to allow him to assume such responsibility.

We sadly need an entire change in our system of education.

Yours truly,
"C."

NORFOLK, VA., March 21, 1897.

CRITICISMS OF THE NEW CHARTER.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: Among the criticisms of the new charter, none has been more severe than that directed against Sections 1247–1249, relating to the duties of physicians in reporting cases of contagious and infectious disease. These sections are referred to as if they were entirely new and unprecedented and designed to give the Health Department a dangerous and tyrannical authority over the members of the medical profession. Now, the fact is that these sections are not new. They constitute Sections 608–610 of the Consolidation Act of 1882, under which the city has been governed for fifteen years, and were originally passed forty-seven years ago, Sections 1247 and 1249 being in Chapter 275, Laws of 1850, and Section 1248 in Chapter 384, Laws of 1851.

Very truly yours,
GEO. B. FOWLER, M.D.,
Commissioner.

HEALTH DEPARTMENT,
NEW YORK, April 14, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

AMERICAN MEDICAL ASSOCIATION MEETING—THE RAZING OF AN OLD HOSPITAL BUILDING—SUMMER INSTRUCTION IN MEDICINE—DR. JOHN W. CROSKEY—SECTIONS ON GENERAL MEDICINE AND GYNECOLOGY OF THE COLLEGE OF PHYSICIANS—PHILADELPHIA COUNTY MEDICAL SOCIETY—A NEW "SPITTING ORDINANCE"—EXAMINATIONS FOR ASSISTANT CITY BACTERIOLOGIST.

PHILADELPHIA, April 17, 1897.

FROM present indications the local committee of arrangements looks for not less than two thousand members at the meeting of the American Medical Association in this city next June. Considering that this will be the jubilee of the association in its birth-place, and that Philadelphia offers many attractions to the visiting medical man, it may be that this large estimate is within bounds; and yet, when it is recalled that at last year's meeting at Atlanta only 750 members were present, and also that here, in the East, a large number of the profession are lukewarm, to say the least, in their interest toward the association, it is unsafe to predict so large an attendance. However, be the number large or small, elaborate preparations for their entertainment are being made, both at the leading hospitals and medical schools, while excursions to various points of interest are already planned. The association will be tendered a large reception at the Academy of Fine Arts by the Jefferson Medical College, and are to be entertained by the University of Pennsylvania at the Union League Club. The meeting will terminate in a series of banquets on June 4th, when each of the thirteen sections will give a dinner to its particular guests.

Laboratory demonstrations on practical points of interest have been arranged for the visiting members during the week preceding and the week following the meeting, by the joint action of the faculties of the Jefferson, Medico-Chirurgical, and University Medical Schools. The following demonstrations will be given at the above institutions at ten o'clock A.M., May 27, 28, 29, and June 7, 8, 10, and 11; "Practical Bacteriology," by Dr. A. C. Abbott; "Skiagraphy," by Dr. C. L. Furbush; "Clinical Microscopy and Autopsies," by Dr. A. A. Stevens; "Clinical Microscopy," by Dr. H. F. Harris; "Pathology," by Dr. D. Riesman; "Skiagraphy, Practical Disinfection, and Autopsies," by Dr. W. M. L. Coplin; "Widal's Serum Test," by Dr, J. C. Da Costa, Jr.; "Rare Tumors," by Dr. J. McFarland; "Skiagraphy," by Dr. M. J. Stern; "Surgical Disinfection," by Drs. J. Chalmers Da Costa and T. L. Rhoads; "Urinalysis," by Dr. J. Marshall; "Bacteriology," by Dr. B. Lewis.

The destruction of the Men's Receiving Ward of the Pennsylvania Hospital, to make room for a more modern structure, removes an old landmark from the medical world of this city, and wipes out the many historical associations of the Revolutionary war and Colonial days which were so intimately connected with the old building. It was erected in 1756 as a laboratory, and was occupied first by the Colonial Army as a medical supply depot, and later by the British troops during their occupation of Philadelphia during the winter of 1777.

That Philadelphia medical colleges of the better class recognize the need for instruction, other than that offered during their regular sessions, is shown by the very satisfactory courses announced for the coming summer by the Jefferson Medical College and the University Medical School. The laboratories of the former institution, by far the best equipped in the city, will remain open from May to October, for both post-graduate and undergraduate instruction in morbid anatomy and histology, normal histology, and bacteriology. At the Pepper Laboratory of the University of Pennsylvania post-graduate courses are announced in physical diagnosis, skiagraphy, and the various branches of pathology and clinical microscopy.

Dr. John W. Croskey has been elected one of the attending surgeons to the Wills Eye Hospital, to fill the vacancy caused by the death of Dr. P. D. Keyser. The election of Dr. Croskey was made from a large field of candidates for the place, which is considered by ophthalmologists of one of the most desirable offices in their specialty.

At the last meeting of the Section on General Medicine of the College of Physicians, held on April 12th, Dr. William Osler of Johns Hopkins University, presented a masterly paper on "The Ball-valve Stone in the Common Duct." Dr. Osler recounted his already well-known views concerning this condition, and exhibited specimens illustrating his subject. A paper was read by Dr. Alfred Stengel on the "Diagnosis of Atheroma of the Arch of the Aorta." Dr. Wm. G. Spiller read, by invitation of the Section, "A Contribution to the Study of Spinal Syphilis." Other papers were read by Dr. Frederick A. Packard, and by Dr. A. E. Taylor.

At a stated meeting of the Section on Gynecology of the College of Physicians, held on April 15th, Dr. John C. Da Costa read a paper on "Pyemia in Infancy"; and Dr. Barton C. Hirst, on "Two Cæsarean Sections—One for Dermoid Cyst Impacted in the Pelvis, the Other for Flat Rachitic Pelvis and Overgrown Child."

The last stated meeting of the Philadelphia County Medical Society was held on April 14th. Dr. A. Ferree Witmer in the course of his very instructive study of the subject, "Is There a Daily Rhythm in Epilepsy?", showed that in the large number of cases of this disease which he had investigated the greatest number of epileptic attacks occurred at 4 A.M., and 4 P.M., that is, at the periods of greatest general vital depression. Dr. Witmer showed a number of composite charts, comprising the records of many cases, and from which he made the deductions embodied in his paper. Regarding the treatment of epilepsy, he said that in his experience the best results were obtained from the use of glycerin, in two-dram doses, after meals; and that this drug when used alone gave better results than when it was combined with bromid. Dr. Joseph Price, in a paper on "Some of the Common Causes of Mortality in Abdominal Surgery," dwelt with emphasis on the importance of the necessary qualities of the surgeon himself as relating to thorough competency, ability to combat emergencies, familiarity with technics, and large experience; and said that a thoroughly educated nurse was also one of the essentials of a successful practice of this specialty. Dr. Mordecai Price read a paper on "Extra-uterine Pregnancy."

Philadelphia is far behind in the question of improvement in many hygienic matters, but she proposes to keep pace with New York and Chicago, in at least one respect, by placing a five-dollar penalty on public expectorators. The present legislation is the outcome of some years' agitation by various local health associations, and it is hoped that the more stringent measures embodied in the new law will accomplish more than the recent, ineffectual prohibitory notices of the Board of Health—prohibitory, but without the restraining influences of the five-dollar penalty.

A civil service examination was held on April 17th, for the position of Assistant Bacteriologist to the Board of Health. It is understood that the successful candidate's name will be announced some time during the coming week.

TRANSACTIONS OF FOREIGN SOCIETIES.

London.

CLINICAL BEARING OF SOME EXPERIMENTS ON PERITONEAL INFECTION—PULSATING EMPYEMA—SOME CASES OF INTESTINAL NEUROSIS—GUMMATA OF THE KIDNEY—A PECULIARLY CANCEROUS FAMILY HISTORY—HYDROCYANIC ACID AS AN ANTIDOTE FOR CHLOROFORM.

AT a meeting of the Royal Medical and Chirurgical Society, held March 8th, DURHAM read a paper on *the clinical bearing of some experiments on peritoneal infection.* It has been found that injections of sterile water, broth, or serum into the peritoneal cavity of an animal will confer upon that animal a certain amount of protection against subsequent infection. This is due to (1) increased bactericidal power of the peritoneal fluid, and, (2), the presence of a very large number of active phagocytes, which are not seen in normal peritoneal fluid. In certain fatal cases of peritonitis in which death rapidly follows the onset of symptoms, no lymph or organisms may be found at autopsy in the peritoneal cavity; but if the lymph spaces in the omentum and back of the peritoneum be examined, abundant organisms may be found. The suggestion was made that the injection of a sterile fluid into the peritoneal cavity of a human being, the day preceding an operation for appendicitis, or for pyosalpinx, etc., would afford a certain amount of protection against purulent infection; and, as fatal peritonitis is often due to streptococci, Durham recommended the use of antistreptococcic serum in this manner.

At the meeting of March 23d, WEST read a paper on *pulsating empyema*, which he described as a rare phenomenon. The pulsation is of two kinds: (1) A general shock usually communicated to a considerable area of the chest wall—intrapleural pulsation. (2) Expansile pulsation localized in an external tumor—extrapleural pulsation. Either variety is usually met with on the left side, and is synchronous with the heart's systole.

Intrapleural pulsation is usually felt, but not seen. Its diagnosis is not difficult. Extrapleural pulsation is met with in empyema only when "pointing." There may be two or more tumors, and situated even as remote as the loin; but oftener there is a single one near the heart. Such a swelling has been mistaken for an aneurism. Puncture with a fine needle is unaccompanied by danger in either case, and will settle the diagnosis at once.

The cause of pulsation has been much discussed. Obviously the heart's impulse must be felt in every large effusion in the left side of the chest, but this is not evident externally unless all the walls of the cavity in which the fluid is contained are rigid; and, as a matter of fact, in these cases both lung and mediastinum are found, *post-mortem*, to be both thickened and rigid. The prognosis is bad, not because of the pulsation, but because the conditions under which it occurs, namely, the fixation of the heart, and the changes in the mediastinum and lungs are such as to prevent their cure.

DENT read a paper before the Medical Society on March 8th upon *intestinal neurosis*, in which he described three cases presenting symptoms of grave abdominal trouble. In one there was severe epigastric pain after eating, supposed to be due to a stricture in the small intestine. There was emaciation and a distinct tumor above the umbilicus which persisted during narcosis. An exploratory incision was made, but nothing was found. All the symptoms disappeared. In another case, in which the swelling was felt in the right iliac fossa, nothing was found on operation, except a slight adhesion between the cecum and the omentum, but while the belly was open the first few inches of the colon were seen to contract into a rounded mass, which, no doubt, explained the occurrence of the tumor felt before operation. There was only temporary relief of the symptoms. In a third case, in which pain was so severe as to cause vomiting, but in which nothing abnormal could be felt, the symptoms were entirely relieved by abdominal massage.

At the Pathological Society meeting, held March 16th, BOWLBY showed a large renal tumor which he had removed from a stout, healthy woman, aged forty, who had suffered twenty-one years previously from syphilis, though for nineteen years there had been no manifestations of the disease. Other than an occasional trace of albumin in the urine, and the presence of an increasing tender swelling in the right loin, the tumor gave no symptoms. When removed the kidney weighed over a pound, and was so full of gummata that it was difficult to find any trace of the renal tubules. As there was no diminution in the amount of urine after the operation, and two years later the health of the patient was excellent, there was every reason to believe that the other kidney was sound.

RICHMOND described to the Pathological Society of Manchester, March 10th, a case of *periosteo-sarcoma of the radius occurring in a girl, aged nineteen, whose family history was peculiarly malignant*. The father's aunt died from a tumor of the breast, and the father's brother died at the age of thirty-four from a tumor of the thigh, which developed after an injury. Of the mother's sisters, one died at the age of sixty from cancer of the face, which developed after an injury; and another died from a tumor of the womb. In the present case there was a history of less than five-months' duration, in which, the left wrist, from a slight enlargement, had reached a circumference of nineteen inches. Microscopically, the tumor consisted of large spindle and large round cells.

At a meeting of the Society of the Anesthetists, held February 18th, HOBDAY urged the use of *hydrocyanic acid as an antidote for chloroform*. In animals when symptoms of danger occur he places a full medicinal dose of the chemically pure acid on the back of the tongue by means of a drop-tube and commences artificial respiration. Theoretically, this drug is a perfect antidote in chloroform poisoning, being one of the most rapid and strongest respiratory stimulants, as well as a cardiac stimulant, and it is rapidly absorbed from mucous membranes without irritation. Practically, he has found the use of hydrocyanic acid to be in accord with the theory.

Berlin.

A PECULIAR DISEASE OF THE BONES OCCURRING IN WORKERS ON MOTHER-OF-PEARL — INTESTINAL STENOSIS AND PERFORATION DUE TO AN INVERTED MECKEL'S DIVERTICULUM — DILATION OF THE ESOPHAGUS FROM AN UNUSUAL CAUSE—LACK OF DEVELOPMENT OF THE LOWER JAW .ASSOCIATED WITH ANKYLOSIS.

LEVY addressed the Medical Society, February 3d, upon *a peculiar disease of the bones occurring in workers on mother-of-pearl*. A patient was presented the lower end of whose left humerus was extremely painful and considerably enlarged. The disease affects the diaphysis, near the epiphysial line; and in the six cases which Levy has observed, the inflammatory swelling subsided without the formation of a sequestrum. Gussenbauer considered the cause of the disease the inhalation of the dust produced in cutting the shells. This dust would contain about ninety-five per cent. of calcium carbonate and five per cent. of an organic substance called conchyolin. He supposed that the lime was absorbed in the lung, and the conchyolin being introduced into the circulation, settled in the diaphyses of the long bone. Experimentally it has not been found possible to reproduce the disease in animals. Levy held to the view that the slime which is found on all sea-shells was the cause of the disease, but in his experiments numerous attempts to reproduce the disease in young rabbits, by subcutaneous injections of the slime, all failed.

EWALD showed a specimen, at a meeting of the Union for Internal Medicine, held February 15th, obtained from a woman, aged forty-two, who, in the last eighteen months, passed through several attacks of obstipation and bilious vomiting, lasting several days. The attacks grew more and more frequent, and recently the peristaltic action of the intestine, during an attack, could be plainly seen and felt. The patient died suddenly, and as many of the attacks were associated with jaundice, her death was attributed to a perforation brought about by a gall-stone. At the autopsy a peculiar condition of affairs was discovered. A Meckel's diverticulum was inverted, like the finger of a glove, into the lumen of the bowel, dragging the mesentery in with it. At this point there was an inflammatory stenosis, so that the caliber of the bowel was scarcely the size of a lead-pencil. In the center of the inflammatory area was a perforation, which was the starting point of general suppurative peritonitis.

JAFFE described a case of dilation of the esophagus, in the Medical Union of Hamburg, February 2d, occurring in a man, aged fifty-two, with well-marked kyphoskoliosis, in which the diagnosis lay between nervous dyspepsia and carcinoma of the cardiac end of the stomach. At the autopsy it was found that the xiphoid process was bent backward, and so closely approximated to an especially prominent dorsal vertebra as to flatten the cardiac portion of the stomach. The lower part of the esophagus was dilated so as to measure eleven centimeters in circumference. It was suggested that an esophageal tube would have relieved the symptoms if left in position for several days; or through a gastric fistula dilation of the constriction might have been performed. The insertion of permanent hollow tubes (Leyden-Renvers), even at the depth of the cardiac orifice, presents no great difficulty, and these tubes can be used for months without an injurious effect. A radiograph of this case was shown, the esophagus being filled with a five-per-cent. solution of subnitrate of bismuth, while a rubber tube filled with shot was passed into the stomach.

At the session of the Medical Society held March 3d, WOLFF presented a patient, a male, aged seventeen, with *congenital smallness* ("*micrognathia*") *of the lower jaw associated with ankylosis.* Such cases are extremely rare, some of them being strictly congenital, and others due to suppurative processes in infancy, followed by ankylosis and lack of development of the lower jaw. In the case presented it was only possible to insert the tip of the little finger between the teeth, and eating was a long and difficult process. The surgical treatment of these cases has been far from satisfactory. Perhaps the best result was obtained by Von Bergmann who resected both coronoid and condyloid processes. In this case, by means of an ingenious plate, the lower jaw was extended forward more than a third of an inch.

KOENIG said that in most of these cases the condition was an acquired one, being a result of osteomelitis in the lower jaw, an infection which is by no means uncommon in the first year of a child's life. The result is that the development of the jaw is imperfect on the infected side, and in the case presented a difference in the two sides was plainly noticeable. If enough of the condyloid process, and possibly of the coronoid also, is removed so as to permit the teeth to be separated for a reasonable distance, the ankylosis will not recur. Von Bergmann thought such cases not as rare as Wolff supposed. He himself had performed operations for their relief six or seven times.

An American Physician Honored.— It is with no little satisfaction that the NEWS chronicles the election of Dr. Abram Jacobi of New York as Corresponding Member of the Royal Medical Society of Vienna.

SOCIETY PROCEEDINGS.

NORTHWESTERN MEDICAL AND SURGICAL SOCIETY OF NEW YORK.

Stated Meeting held January 20, 1897.

The President, DR. CHARLES L. DANA, in the Chair.

SYPHILITIC NEURITIS.

DR. JOSEPH COLLINS presented a man, twenty-four years old, by occupation a box-maker, who had been well until ten months ago. He denied syphilitic infection, and used liquor and tobacco in moderation. History of the present illness dated back ten months, when an attack of dysentery began. For six months he had had bloody stools, with consequent emaciation and weakness. After this ceased, he became very nervous, and complained of pain and "sticking" sensations throughout the upper extremities, which he described as rheumatic pains. They were not severe enough to confine him to his home. One day, about six weeks ago, on coming down the steps of his house, he began to feel dizzy and weak, and then fell. He did not lose consciousness, except, possibly, for a moment. The strength of the lower extremities completely forsook him, and there was a tetanic spasm (contracture of both upper extremities), lasting several minutes. He was unable to get back into the house, for, although his legs were not completely paralyzed, he could not stand. The paresis of the legs disappeared entirely after a few days. The weakness of the arms and forearms was so great that he was not able to perform any voluntary act.

When he came under observation, examination showed atrophy of both shoulders and of the upper arm, symmetrically distributed. There was inability to draw the shoulders backward, even to the slightest degree. He could raise both arms simultaneously to a right angle with the body, and could raise them individually somewhat higher than this by tilting the body backward. The muscles that were particularly atrophied were the supra- and infraspinatus, the deltoid, and the trapezius. Electrical examination showed a complete reaction of degeneration; *i. e.*, absence of reaction to the faradic current in all the muscles of the upper arms and shoulders, excepting the trapezius and biceps, and in the latter there was partial reaction of degeneration manifested by vermiform contraction. There was scarcely any reaction to the galvanic current. There was no sensory defect to be made out, nor was there tenderness on pressure of the mixed nerves, such as the brachial plexus and its branches. The left knee-jerk was quick and abrupt, the right rather slow. The sphincters were unimpaired, and the patient is fully potent.

Treatment consisted of the administration of tonics, small doses of iodid of potassium, and the utilization of electricity and hydrotherapeutic measures. The patient has improved considerably. When first seen, he was unable to feed himself; he could now do this and was able to dress without assistance, and, in a general way, look after himself. The improvement could be noticed from week to week.

The speaker said that the probable anatomic diagnosis was a vascular lesion which cut off the blood supply going to the vertebral horns or cornuæ of the spinal cord in the midcervical region, although it was barely possible that the lesion was of the gray matter itself—an acute parenchymatous inflammation of the anterior horns; still, certain features in the case, particularly of its onset and development, were inimical to such a conception of the pathogenesis of the lesion. It seemed to him that the interpretation to be put upon the case was as follows: The patient had suffered from a specific disease for several months, and the consequences were that it not only depleted the entire system, but injurious influences were exerted particularly, and for inexplicable reasons, upon the blood-vessels distributed to the spinal cord. Without attributable exciting cause, one of these blood-vessels either ruptured or became occluded in its caliber, and it is probable that this vessel was one of the branches of the anterior spinal artery as it passes down into the anterior median fissure. The acute phenomena accompanying such a lesion were manifested by tonic tetanic spasm of the upper extremities, dizziness, momentary and transitory loss of consciousness, great prostration, and more or less quadriplegia. The weakness of the lower extremity, however, disappeared almost at once, the only paralysis remaining being that dependent upon cessation of function of those cells in the cervical spinal cord which preside over the movements of the upper extremities. After the obstruction, or the results of the hemorrhage had been removed, and the acute exudative phenomena had subsided, the return of volition to some of the muscles of the upper extremity denoted that the destruction of ganglion cells was not so great as the first symptoms indicated. It was in this way that the speaker accounted for the very gratifying partial recovery which the patient had made. Although for several days after the accident, the upper extremities seemed paralyzed, a condition indicating very profound interference with the peripheral motor nerves, the rapidity of recovery showed that they were encroached upon, not destroyed.

It seemed to him that there were many factors in the case that spoke against the diagnosis of peripheral multiple neuritis, should such a diagnosis occur to one. The absolute symmetry in distribution of the paralysis, the absence of all sensory accompaniments, the absence of tenderness on pressure of the mixed trunks, and the mode of development, perhaps more than anything else, were against such a diagnosis. It was, perhaps, not so easy to differentiate acute poliomyelitis, but even that condition, the speaker thought, might be eliminated, considering the onset, the course, and the termination of the disease.

Dr. William Stevens then read a paper, entitled

NERVOUS AFFECTIONS OF THE STOMACH.

The author claimed that organic lesions of the stomach were an exception in cases presenting symptoms of stomach disorder. Functional troubles, however, were very common, and most of these were of reflex nature and the result of some organic affection located elsewhere in the body. A number of cases were reported to substantiate the position taken by the author.

Dr. J. H. Fruitnight, in discussing the paper, said that the point made by the author of the paper is frequently exemplified in the cases of children. Many affections ascribed to the stomach are really neuroses. Such cases require proper and carefully administered nourishment. When the stomach disorder has reached a still more advanced stage, rest of the organ is indicated. Food *per os* should therefore be withheld temporarily.

SARCOMA OF THE APPENDIX.

Dr. Robert A. Murray reported the following unusual case: The patient was a boy, six years of age, whom he had seen at ten o'clock at night on May 4, 1896, in consultation with Dr. William E. Forest of this city. There was no family history of malignant disease. The boy was poorly nourished but very active, and a year previous he had fallen from a second-story window, without, however, sustaining any serious injury. A month before the speaker saw him, the boy was attacked with pain in the right hypogastrium. A tumor was discovered in this region and a diagnosis of appendicitis made. Under rest and the application of ice the inflammation disappeared, although some hardness was left in this region.

When the patient was first seen, he had been ill for about a week. Pain was marked, the abdomen distended and tympanitic, the knees drawn up, and a tumor could be felt extending a little inside the spine of the ilium, toward the navel. There was no fluctuation. The bowels had been obstinately constipated. His temperature was 103.5° F., and pulse 110 and steady. Vomiting was not marked. He was seen again the next morning. In the meantime, ice had been applied to the region of the tumor, and he had been given repeated doses of a saturated solution of sulphate of magnesia, the latter resulting in a free movement of the bowels. The temperature was still 103.5° F., and the abdominal tenderness well marked. The patient's condition was so low that immediate operation was deemed necessary. An incision was made in the right hypogastrium and, upon opening the abdomen, a large mass was found upon the side of the appendix and involving the intestine. This mass was as large as a fist, easily broken down with the finger, and involved the intestine to the extent of three inches opposite the attachment of the mesentery, the latter being thickened and agglutinated to other portions of the intestine by exudation. The patient's condition was so desperate that no attempt at resection was made, and the gut was simply brought up in the wound, opened, and stitched there after flushing the parts with hot salt solution.

Immediately after the operation, the pain and vomiting ceased, and the tympanites disappeared. By evening the temperature went down to 100° F. Feces and a large quantity of gas were passed through the opening in the gut. The wound was dressed each day with oakum after irrigation with boric acid solution, and zinc ointment was applied to the edges of the wound in order to prevent irritation. The temperature went down to normal within a week, and in the course of a month the patient was well enough to be lifted to a sofa. He made a good recovery, the wound remaining open and feces being passed both through the wound and by rectum. The boy grew stronger, and was able to come to the speaker's office in August. At this time the wound was still open, and a marked induration about its edges, which had first been noticed in July, persisted. This induration increased rapidly, and to such an extent that it obstructed the bowel. The boy became very much emaciated and finally died in December, about eight months after the operation. Unfortunately, no autopsy was obtained.

Sections of the tumor had been given to Dr. Grauer, who pronounced the disease to be round-cell sarcoma, involving the entire section of the bowel and the mesentery, and declared it to be very malignant, and sure to recur. Slides were exhibited.

The case was interesting on account of the involvement of the appendix with the sarcomatous growth, and because of the rapid improvement which followed the operation. The latter undoubtedly prolonged the child's life for eight months. Any attempt at resection of the intestine would certainly have proved fatal on account of the desperate condition of the patient, and at no time did his health or the state of the wound give promise that further interference would be well borne.

In the discussion which followed, DR. WILLIAM VISSMAN, who was present by invitation, and had examined the slides, said that he doubted the evidence of malignancy as shown by the microscopic specimens.

REVIEWS.

WATER AND WATER SUPPLIES. By JOHN C. THRESH, D.SC., M.B., Etc. London: The Rebman Publishing Co. Philadelphia: W. B. Saunders. Pp. xvi–438. 1896.

TO quote the author: "The main object of this little work is to place within the reach of all persons interested in public health the information requisite for forming an opinion as to whether any supply, or proposed supply, is sufficiently wholesome and abundant, and whether the cost can be considered reasonable."

The writer, who has had large experience in submitting plans for the furnishing of wholesome water for scattered populations in rural districts, points out the importance of wholesome water supplies. Our sanitary inspectors in rural districts might learn a great deal by the careful perusal of the words of admonition which Dr. Thresh gives in regard to this matter in the preface of his work. Intended reforms might be modeled on the lines of the writer's suggestions, upon the remedies for the present method of well-water supplies from such wells as are supplied by filtration or percolation of surface or subsoil waters through surrounding strata.

For the purification of rain water the writer describes the ingenious rain-water separator of Roberts, in which the dirty water is separated from the clean. The use of water derived from soil or subsoil drainage, especially in such cases where contamination may easily result from surrounding dwellings or barns, and more or less easily possible, according to the prevalent geologic formation, is particularly dangerous from a hygienic point of view, the possibility of contagion in such cases being raised to a maximum. A large part of epidemics of disease have been traced to such sources, and the necessity of the careful inspection and immediate remedy of these conditions can only be most strenuously impressed upon State Health officials and examiners.

The physical, chemical, and bacteriologic examinations of a water must be made before it can be used for potable purposes; in fact, it would be unwise to accept a water for drinking purposes unless it answered certain requirements when subjected to all of these methods of examination, one method alone not giving us sufficient data to enable us to judge of its purity.

The method of examination, the interpretation of the analysis, and the disorders and diseases resulting from the use of impure and unwholesome waters, are carefully treated in this work. The filtering of all waters, in which there is a possibility of contamination, is recommended, and the employment of domestic filters is especially considered.

The rest of the work is devoted chiefly to engineering facts and plans, the part cited above being most useful to the medical profession. On the whole, the book, which is excellently indexed, may be recommended for careful perusal to any one in search of information upon this subject.

THE SPAS AND MINERAL WATERS OF EUROPE. With Notes on Balneotherapeutic Management of Various Diseases and Morbid Conditions. BY HERMAN WEBER, M.D., and F. PARKS WEBER, M.D. London: Smith Elder & Co., 1896.

THIS handy and compact volume of nearly 400 pages is one of the best of its kind that we have ever had the pleasure of reviewing. After looking it through with some care we are gratified at being able to state that the authors have had a most laudable end in view in its preparation, and that the book bears no earmarks of personal or corporation interests, as so many "guide-books" that have gone before have done. It is intended to supply, and does supply, some knowledge of the spas of Europe, the method of treatment adopted there, and the morbid conditions which are most likely to be cured or ameliorated by them.

When one recalls the exodus of American citizens from these shores every summer, compared with which that from Egypt was naught, and if he bears in mind the fact that a considerable number of these seek renewal of health at some European spa with the tacit consent or at the suggestion of their medical advisers, it is readily apparent that the latter should know something whereof he recommends. If one would obtain such information we heartily recommend this little volume. The chapter on balneotherapeutic management is most satisfactory, considering the small amount of space devoted to it. The value of the book is enhanced by a bibliographic table and by a comprehensive index.

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ORIGINAL ARTICLES.

EARLY DIAGNOSIS AND EARLY NEPHRECTOMY FOR TUBERCULOSIS OF THE KIDNEY.[1]

BY WILLY MEYER, M.D.,
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AT the annual meeting of the Medical Society of the State of New York, January 29, 1896, I read, by the kind invitation of its president, a paper entitled "The Early Diagnosis of Tuberculosis of the Kidney."[2] My remarks were based on the cystoscopic examination of two male patients who evidently suffered from primary renal tuberculosis in its early stage. The examinations were made by me in 1892 and 1893, *i. e.*, at a time when we were not yet in possession of a useful instrument for catheterizing the ureters. The correctness of my diagnosis, to my regret, could not be demonstrated by producing the pathologic specimens. Both men refused to accept my advice to have nephrectomy performed at once.

By way of reviewing the principal facts laid down in the article mentioned, I would here state the following: It is only the chronic form of tuberculous inflammation that interests the surgeon. The other form, acute miliary tuberculosis, belongs to the domain of internal medicine. The chronic tuberculous inflammation of the kidney is always at first unilateral and descends from the one kidney into the bladder (infecting on its way the ureter), and involves in the beginning one side of the latter organ only. In many instances of commencing renal tuberculosis this one organ, the kidney, alone is attacked by the deleterious inroads of the *bacillus Kochii*, while the lungs, intestinal tract, bones and joints, are absolutely healthy. Considerable time always elapses before the prostate, with the rest of the genital system and the other kidney, become affected.

With reference to diagnosis, I maintained that it was absolutely necessary that the general practitioner should make or have made a very careful analysis of the urine, whenever, in a formerly healthy person, a painful and frequent micturition sets in suddenly, with or without intermittent renal colic, while a formerly transparent urine becomes turbid by the admixture of mucus, pus, or even blood. In such cases one should not invariably think of the presence of a renal calculus, but also of the possible presence of primary renal tuberculosis. The analysis of the urine should include microscopic examination for tubercle bacilli.

If there be suspicion of tuberculous disease, a negative result should not be accepted as final, but the examination should be repeated a number of times. It has been a great help, according to my experience in such cases, to have the patient collect in one large bottle the urine discharged during twenty-four hours, and at the end of this time to shake up the sediment well and fill a six- or eight-ounce bottle with an average specimen. The analysis of this specimen forms the basis for conclusions with reference to the health or disease of one or both kidneys. If tubercle bacilli are found, the diagnosis of tuberculosis of the urinary system is settled; if they are not detected, microscopic specimens should be taken from that sediment which had formed in the entire amount of urine collected within twenty-four hours. Should the microscope fail, after repeated trials, to prove the presence of the bacilli, it will be well to inoculate a rabbit by injecting some of the sediment into his pleural or peritoneal cavity. The use of Koch's tuberculin, which, after injection makes tubercle bacilli appear in the urine of patients suffering from renal tuberculosis (Czerny), cannot be advised on account of the occasionally injurious effect of these injections. The best means, however, for clearing up a doubtful case, and the only one by means of which an exact diagnosis can be made with reference to the primarily affected part of the uropoietic system, is cystoscopy in combination with catheterization of the ureters.

In the article mentioned above I stated that if after repeated search tubercle bacilli were not found in the urine of a patient in whom the presence of tuberculous disease was suspected, the cystoscope would settle the diagnosis. I said: "On viewing the interior of the bladder, the cystoscopist perceives an absolutely healthy surface of the vesical mucous membrane and one perfectly normal ureteral opening. The mouth of the other ureter, however, is injected, and a number of circumscribed, clearly defined, inflamed areas of mucous membrane can be seen between it and the slightly hyperemic trigonum, leaving the interposed tissue unchanged in appearance; and thus one recognizes with marvelous and astonishing clearness the enemy's steps in a hitherto uninvaded field. I could not compare this picture better than to liken it to foot-prints in the freshly fallen snow. No other disease of the bladder or kidney with which I am acquainted presents a similar cystoscopic appearance."

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[1] Read before the Surgical Section of the New York Academy of Medicine.

[2] MEDICAL NEWS, March 7, 1896.

From this cystoscopic picture alone, I should venture to make the diagnosis of primary tuberculosis of one kidney, so much more, if intermittent, frequent, and painful micturition be the principal symptom. In a case of non-specific pyelitis or pyonephrosis the patient will pass his urine every four or six hours, even if one-third of the whole amount is pure pus. In cases of gonorrheal affections of the kidney, where the pathologic process has ascended, it naturally has passed the vesical viscus, and there first produced a gonorrheic catarrhal inflammation. If a patient with renal tumor be submitted to a cystoscopic examination early, say after the first attacks of hematuria, the bladder will be found normal throughout; that is to say, assuming that infection had not been previously carried into the bladder by catheterization with insufficiently disinfected instruments, which could have set up an artificial catarrh. Should this have occurred, the picture will be blurred. It cannot then be expected that cystoscopy can be performed with success and satisfaction. From this point of view we cannot too strongly insist upon the primary use of the cystoscope. Not in every case of primary renal tuberculosis that is subjected to an early cystoscopic examination, will the clear, unmistakable picture, as above described, be seen. Those clearly defined, circumscribed inflamed areas of the vesical mucous membrane between one ureteral opening and the internal urethral orifice, may be missed. Only the site of the mouth of one ureter may be inflamed and swollen; or, besides this phenomenon, and that in somewhat more advanced cases, a few disseminated, injected areas or superficial small ulcerations will be found in the fundus of the bladder behind the ureteral fold or on the lateral vesical wall corresponding to the affected side.

What I mean to emphasize here as an established fact is this: A rather recent, sudden, or slow appearance of painful or frequent micturition in a hitherto healthy subject who had not been infected with gonorrhea; concurrent with this, permanent, or more especially intermittent, voiding of a turbid urine with or without blood; on cystoscopic examination, a perfectly healthy bladder with only one ureteral opening clearly inflamed and swollen means "primary tuberculosis of the respective kidney." And this diagnosis can be made with propriety even when tubercle bacilli are not found. The cystoscopic diagnosis will be confirmed if circumscribed inflamed areas are seen unilaterally in the bladder, either between the inflamed mouth of the respective ureter and the trigonum, or behind or to the side of the ureteral opening. It is, of course, possible that if a patient's bladder be inspected immediately after the first onset of the above-described renal symptoms, the secondary vesical symptoms have not yet had sufficient time to properly develop. Judging from what my experience has shown me, I should say that the secondary infection of the respective ureteral opening would appear very early in primary tuberculosis of the kidney, that is to say, within about four to six months. It is understood that nowadays catheterization of the ureters and separate drainage of the secretion of each kidney, with separate analysis of the urine collected in this way, is to be added to the cystoscopic examination in order to corroborate and still further define the result of the cystoscopic diagnosis.

I have mentioned above, that the surgeon must also exhaust all the means at his disposal to test for the presence of tubercle bacilli.

The following case which came under my care through the kindness of Dr. Elizabeth Cushier, Attending Physician to the New York Infirmary, will well illustrate the correctness of the statements just made:

Mrs. E. K., forty-six years of age, widow, married when twenty-five years old. Had had four children; no miscarriages. Youngest child two and a half years old. Two sisters died of phthisis. Husband was killed by an accident in the fall of 1894; had always been a strong, healthy man. Since his death the patient had worked hard to support her family. In August, 1895, her skull was fractured by a brick which fell from a building. She was treated at Bellevue Hospital for six weeks, but was not trephined. Up to that time she had not had urinary trouble or other symptoms of disease. She soon began to complain of frequent micturition, accompanied by lancinating, burning pain. From that time these symptoms continued to increase in severity, with intervals of comparative comfort, the pain being noticed before, during, and after the act of micturition. The latter was very frequent, hourly, half-hourly, and sometimes even every fifteen minutes. She also had pain in the pelvis, bearing-down sensations, backache, and nearly constant headache. She did not feel able to work, was weak, and did not sleep well. Appetite was fair, and bowels generally regular. The patient attributed most of the bladder symptoms to the fracture of the skull. She had consulted a physician in reference to the pelvic symptoms (she also suffered from leucorrhea), and he sent her to the New York Infirmary for observation and possible repair of a lacerated cervix. She was admitted to the Infirmary in April, 1896.

Examination showed great sensitiveness of the bladder to pressure through the vaginal wall; also, behind the cervix high up in the right vaginal fornix.

The cervix was lacerated, and the uterus rather large, but in a normal position. The urine, which was frequently examined, was generally found to be faintly acid or neutral, and slightly turbid. Specific gravity, 1014 to 1016. Odor normal. After filtration some albumin was found, but no sugar. The microscope demonstrated many pus cells, some of them broken down, and very few blood cells. There were no triple phosphates or casts. On one occasion the urine was quite clear and gave no reaction for albumin. Pulse 72 to 80; no rise of temperature (only twice it rose to 100.2° F.). Heart and lungs normal. Besides daily irrigation of the bladder with a normal salt-solution, the patient received some gynecologic treatment. There were several exacerbations of bladder pain and frequency of micturition, lasting several days. At such times the patient passed a small quantity of urine every half hour or hour, day and night, and complained of severe pain; between the exacerbations the pain was much less severe, but always present to some degree, and urination occurred seven or eight times a day. Amount of urine thirty to forty-five ounces daily.

Because of the continued presence of pus in the urine, the bladder symptoms, and the unabated sensitiveness to pressure on the bladder, especially at a point corresponding to the entrance of the right ureter, Dr. Cushier kindly sent the patient to me for a cystoscopic examination. On June 5th I performed the latter at my office, in the presence of Drs. Elizabeth Mercedes, Pathologist to the New York Infirmary, and Marian D. McDaniel, of the Infirmary staff. Contrary to my usual (routine) practice in these cases, namely, first, to make a careful general examination of the patient, and also a chemic, microscopic, and bacteriologic analysis of the urine, for several reasons, I introduced the cystoscope at once, without these previous examinations, and found the following most interesting condition: The entire bladder, the left ureteral fold, and the mouth of the left ureter were perfectly normal. The latter receded and protruded at intervals, and gave exit, as it appeared, to perfectly clear urine. The trigonum was very slightly injected. Corresponding to the mouth of the right ureter a uniformly purplish-red, somewhat elevated, spot of about the size of a ten-cent piece was seen. It presented an irregular surface, had a number of ecchymotic spots, and was covered here and there by white flakes of mucus. It did not move with the expulsion of urine. Its border line was rather ragged, but very distinct. The surrounding surface of the bladder was absolutely normal, not injected. No other spot of the interior surface of the bladder appeared to be diseased. The picture was striking, and, according to my cystoscopic experience, so characteristic of tuberculous disease that I at once asked the doctors present whether search for tubercle bacilli had been made in the specimens of urine. Receiving a negative reply, further examination was stopped for the time being.

In a subsequent search, Dr. Mercedes found the bacilli. Dr. Fred. E. Sondern also made an analysis of the urine, at my request, and reported the presence of a very small amount of blood, a moderate amount of pus and mucus, some hyalin and finely granular casts, numerous cells of the superficial and middle layers of the bladder (also intact aggregations of the same), some groups from the renal pelvis, and several groups of tubercle bacilli.

On June 18th the patient again came to my office, for catheterization of the ureters. Casper's instrument was used, and the left ureter was easily entered. The urine was perfectly clear, light amber in color, and 12 c.cm. was collected in ten minutes. The attempt to introduce the tiny catheter into the right ureter was difficult, but soon successful, in spite of the indistinct appearance of the orifice. It could be done only by carefully and repeatedly testing the inflamed area described above with the tip of the ureteral catheter. This caused a small hemorrhage. Suddenly the catheter slipped in, but it could be pushed forward a very short distance only. An impassable resistance was met with. There evidently was a stricture about three-fourths to one inch above the orifice. As further manipulations proved to be of no avail, and urine did not flow through the catheter, the instrument was removed and the bladder washed out and cocainized for a second time. A small blood clot was found in the eye of the catheter. A second and, later, a third attempt was made to complete the separate collection of the urine descending from the right kidney, but my efforts were unsuccessful, the stricture precluding success. Yet the work had not been done in vain. I had for examination and comparison the bladder urine and the specimen separately collected from the left kidney. If the latter proved healthy, the conclusion was absolute that the right kidney was the seat of the disease, and this on the simple reasoning that the bladder urine had shown evident symptoms of renal disease, and cystoscopy had proved the bladder, except the right ureteral orifice, to be in a healthy condition.

The specimen of urine collected from the left kidney was submitted to Dr. Sondern for examination. He reported that it showed absolutely nothing abnormal; that tubercle bacilli could not be found on repeated search; and he concluded that the left kidney was normal. Thus, the separate analysis of the specimens of urine fully corroborated the clinical diagnosis made at my first cystoscopic examination: primary tuberculosis of the right kidney, with secondary, still localized, involvement of the bladder. Nephrectomy was decided upon and performed, with the kind assistance of Drs. Gertrude B. Kelly and Eleanor B. Kilham, on June 30, 1896, at the Infirmary. The kidney was found to be comparatively large; it was situated rather low. The wound was partially closed by suture, partially packed with aseptic gauze. The pedicle was secured by an elastic ligature. The patient stood the operation very well, and her recovery was uneventful. The urine voided on July 1st, the day after the operation, was perfectly clear and light amber in color. It was faintly acid, and did not contain albumin or sugar. Micturition was almost painless, and less frequent by far than before the operation.

I owe thanks to Drs. Kelly and Kilham, and to the members of the house staff of the Infirmary. To their faithful after-treatment I feel that the patient's rapid and uneventful recovery is largely due.

The specimen obtained is of great interest.

Macroscopic Examination.—Kidney measures 11 x 7 x 6.5 centimeters. Surface slightly lobulated, as in fetal state. Scattered over the entire surface are tiny elevations from 2 to 5 mm. in diameter. Some of these are clear and translucent, evidently small cysts, while others are opaque and firm.

The capsule strips off readily, leaving these intact beneath.

A considerable portion of the hilus has been cut away, exposing an irrgular cyst-like cavity about 2 cm. in diameter. The wall is thin and quite smooth on the inner side. The cavity extends to within nearly 2 mm. of the surface. (Beginning tuberculous pyonephrosis.)

Upon section through the cortex, the kidney is found healthier at its upper end. Here the pyramids are well marked; at the lower end not. Here and there, especially throughout the cortical layer, are seen the same opaque plugs as noted on surface. In the lower half of the parenchyma of the organ, near the cortex, is found an abscess cavity of about double the size of a pea. It is irregular, and filled with thin pus.

Microscopic Examination.—Section through cyst wall: The outermost layer is of connective tissue, poor in nuclei. Beneath this is a marked infiltration, with lymphoid cells, and also free blood in the tissue. Malpighian tufts show partial or complete hyaline degeneration. The inner edge is formed of degenerated tissue, but no tubercle tissue is seen anywhere.

Section from cortex: The small-celled infiltration is more general; changes in Malpighian tufts the same. But here we find large and small areas of the typical tubercle tissue. In places this is quite broken down, and corresponds to opaque points seen on the surface and through the cortex.

Diagnosis.—Diffuse tuberculosis of the kidney, with formation of cysts. Small areas of cheesy degeneration. (Report from Pathological Record of New York Infirmary. Signed, E. Mercedes, Pathologist.)

To-day the wound is firmly closed, and the patient has gained in weight, in spite of her daily hard work. She voids normal, healthy urine about every four or six hours during the day, without any trouble or pain, and during the night voids none at all.

As far as the influence of the removal of the diseased kidney upon the commencing vesical tuberculosis is concerned, it seemed to be not only of interest, but of importance (mainly with reference to clinical experience) to perform cystoscopy once more. It had to be decided, as far as one single case can show anything, whether early extirpation of a tuberculous kidney can cure a beginning bladder affection *per se*, that is, without any further local treatment; or, whether tuberculous, though localized, infection of the bladder, having once occurred, will persist, although the continued reinfection from above had been rendered impossible; or, thirdly, whether, when the bladder has once been infected, the disease will spread and involve the entire organ.

Four months after the operation I, therefore, once more examined the patient's bladder at my office in the presence of Dr. McDaniel. I was astonished to see that the formerly inflamed area had entirely disappeared. The right ureteral opening was clearly visible, and the tissue surrounding it just the least bit injected. The vesical wall in its immediate neighborhood appeared normal. Thus the patient's cell energy had gotten rid of a beginning tuberculosis of the bladder, simply by the radical elimination of the continuously reinfecting primarily diseased focus. I believe this speaks for itself.

In perusing the literature on this subject, I have been able to find but one case where, by virtue of an *early* established definite diagnosis of primary tuberculosis of one kidney, nephrectomy was performed with the same effect and success as in the case here reported. It is the well-known case of L. Casper of Berlin, published in the *Berliner Klinische Wochenschrift* for April 27, 1896. It very much resembles that of my own. Briefly stated, it is as follows:

The patient, a woman aged forty-two, with negative family history, while suffering from a cold, was suddenly affected with frequent micturition and turbidity of urine. Soon intermittent pain in her right loin, together with an annoying sense of abdominal tension, was added to the other symptoms. Irrigation of the bladder only aggravated the trouble. Six months after the onset of the disease she came under Casper's care. Loss of weight up to that time amounted to six pounds. She urinated about every three hours in the day time and two or three times during the night. The urine was slightly turbid and of acid reaction. The specific gravity was 1018. It contained numerous pus cells, epithelial cells of the renal pelvis, and some albumin. There was no blood or casts. Bacteriologic examination revealed tubercle bacilli. Palpation of kidney and bladder negative. Upon cystoscopic examination the bladder appeared healthy throughout. The vessels of its mucosa were clearly defined. The left ureteral opening was normal In the situation of the right ureter, whose opening could not be seen, was a diffusely injected, slightly elevated area. Clear urine spurted at intervals from the normally moving left ureteral mouth. The reddened spot at the usual site of the right one was immovable. Now and then a whirl of fluid emanated from it. The observer's eye was unable to distinguish any change in the translucidity of the latter. Two days later the ureters were catheterized. The left kidney discharged perfectly clear, normal urine. It was difficult to enter the right ureter. After a number of unsuccessful attempts the instrument suddenly slipped into the canal and was readily pushed forward. The urine thus obtained resembled the bladder urine, being turbid, slightly purulent, and albuminous. The amount of its albumin was in excess of that found in the bladder urine. Tubercle bacilli could not be demonstrated.

They were found, however, in another specimen which was drawn from the right kidney three days later. Diagnosis: Tuberculosis of the right kidney with circumscribed involvement of the bladder.

Some time later Professor Von Olshausen of Berlin performed nephrectomy. The surface of the kidney was covered with tuberculous nodules, and two cheesy foci were found in the parenchyma. The patient recovered. The urine rapidly cleared up and her pain disappeared.

By a peculiar coincidence, both patients, Casper's and my own, were female subjects. I wish to emphasize that this exact diagnosis could as well have been established if both had been males.

Meanwhile other authors have perhaps been similarly fortunate in making such an early definite diagnosis of this, in its ultimate course always deadly, disease. If so, I trust they will publish their interesting experiences. A multitude of similar successes must convert doubtful minds in the medical profession and make them draw this important conclusion: *In obscure urinary diseases always have an exact analysis made with the help of all modern means, and that as early as possible.* If this has been done beyond a doubt, do not let us avoid the logical consequence, *timely radical operation.*

Every one of us has seen over and over again tuberculosis of the urinary tract in its later stages. I need not describe its terrible symptoms. Surely the disease is much more frequent than the general practitioner seems to believe. Glancing over my records of this year, I find that I was able to definitely diagnose descending unilateral renal tuberculosis, with subsequent involvement of the bladder in a comparatively early stage, in five patients. Almost every one of these, however, had passed the border line where nephrectomy alone could have effected a permanent cure. In a number of them the additional total extirpation of the diseased ureter (a decidedly more serious operation than simple nephrectomy) would have been indicated. Perhaps a longer stay in a warm climate, with proper general regimen, local vesical treatment, etc., might also have so far improved one patient that we might later have been able to speak of a cure. But what an amount of sacrifice is required to save such a patient's life! How often will recovery be impossible because he cannot afford to carry out our orders; meanwhile, how often in the male subject will an ascending affection of the other kidney and the absolutely incurable involvement of the genital sphere have taken place.

Happy may we be, therefore, that the improved instruments at our command to-day have placed the means at our disposal to make an early exact diagnosis, on the basis of which we can do ideal surgical work. Every case thus saved from a slowly wasting disease, dreadful in its duration, its tortures, and ultimate end, surely means a triumph of modern surgical diagnosis and therapy!

THE CHEMISTRY OF GALL-STONES, WITH SPECIAL REFERENCE TO THEIR MODE OF ORIGIN.[1]

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The biliary calculi, or concretions, which are so frequently formed in the gall-bladder, and in the intrahepatic bile-ducts, may be divided on the basis of their chemical composition into three main groups, *viz.:* (*a*) those which are composed in great part of cholesterin; (*b*) those whose chief constituent is bile pigment, combined with calcium; and (*c*) those composed mainly of calcium carbonate and phosphate. In man, however, we have to deal chiefly with calculi containing a large predominence of cholesterin, with some admixture of pigment and calcium, *i.e.*, the so-called mixed cholesterin calculi; although occasionally nearly pure cholesterin stones are found, and, on the other hand, nearly pure pigment-calcium calculi may occur. A so-called cholesterin calculus, however, invariably contains some other material—at least in the nucleus—the largest proportion of cholesterin ever found in a calculus being, I believe, 98.1 per cent., while the minimal amount in a true cholesterin calculus is about 64 per cent. In the gall-stones of oxen cholesterin is sometimes wholly absent, while as much as 45 per cent. of bilirubin may be present, *i.e.*, in a typical pigment-calcium calculus.

In most cases the nucleus of the gall-stone is composed of the insoluble combination of bilirubin, or a related bile pigment, with calcium or lime. Less commonly, the nucleus appears to consist of a crystallin mass of cholesterin, with some mucus, while occasionally some foreign substance may serve as the center around which the concretion forms. According to Naunyn, the nucleus of many gall-stones is made up of spheres or warty masses of calcium carbonate.

It is thus evident that in considering the chemical composition of gall-stones we have to deal mainly with three classes of substances, *viz.:* cholesterin or cholesterins; bile-pigments, chiefly bilirubin, combined with calcium; and certain mineral salts, especially calcium carbonate and phosphate. Cholesterin, bilirubin, and calcium salts are all normal constituents of human bile, and we may profitably consider for a moment some of their peculiarities as an aid to a better understanding of their presence in gall-stones.

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[1] Read before the New York Academy of Medicine, April 15, 1897.

Cholesterin, when pure, is a white crystallin substance, more or less waxy, lighter than water, readily soluble in warm alcohol, also in ether, chloroform, benzol, and other like solvents, but insoluble in water. Although it has many of the physical properties of a fat, it cannot be classed with the fats since it is non-saponifiable, and contains within its molecule neither fatty acid nor glyceryl radicles. In view of its peculiar solubility we may well inquire how it is that cholesterin exists dissolved in normal bile? As already stated, it is wholly insoluble in water, and also in aqueous solutions of neutral salts, but the salts of the bile acids—sodium glycocholate and taurocholate—exert a solvent action upon the substance, and it is in virtue of these constituents, aided perhaps by the soluble soaps and neutral fats, which are likewise present in bile, that the cholesterin is held in solution. The extent of this solvent action is indicated by some experiments made by Happel, who found that aqueous solutions of sodium glycocholate and taurocholate—0.2 to 2.5 per cent. in strength—are capable of holding in solution at the body temperature an amount of cholesterin equal to one-tenth the weight of the bile salt. Presumably, any concentration of the cholesterin beyond this point would be attended by its separation or crystallization.

The amount of cholesterin contained in human bile varies quite noticeably with the length of time the bile remains in the gall-bladder. Thus, as the recent analyses of Hammarsten[1] show, so-called "liver bile" flowing directly from the liver, contains 0.048 to 1.160 per cent. of cholesterin, while "bladder bile" may contain as much as 0.986 per cent. of the substance. This apparent increase in the content of cholesterin attendant upon the sojourn of the bile in the gall-bladder is not necessarily due, as might at first sight appear, to an outpouring or secretion of cholesterin from the mucous membrane of the bladder, but is the result of a general concentration of the bile attendant upon an absorption of water and of diffusible salts. This absorption of water with consequent concentration of the bile is not due, according to Hammarsten, to a simple process of diffusion, but is the result of a specific activity on the part of the epithelial cells of the mucous membrane by which water and soluble chlorids are removed. Hence, when from any cause bile is retained within the living gall-bladder for any great length of time, this process of absorption leads to a very great increase in the concentration of the fluid. Thus, while human "liver bile" rarely contains more than 3.5 per cent. of solid matter, "bladder bile" may contain as much as seventeen per cent. of solids. That this increase in solid matter is due only in part to secretion of mucous material from the walls of the gall-bladder is evident from the proportion of bile salts in the two cases. Thus, while liver bile seldom contains over 1.8 per cent. of glycocholate and taurocholate, bladder bile may show nearly ten per cent. of these salts. It is thus manifest that the increased amount of cholesterin found in bile which has stood for some time in the bladder can be wholly explained on the ground of growing concentration, due mainly to the withdrawal of water. Now, in this connection it is to be remembered that stagnation of bile in the gall-bladder is generally considered as a primary condition in the formation of gall-stones, that anything which tends to hinder the flow of bile favors the formation of biliary calculi, and the above facts certainly lend favor to this view. The mere concentration of bile, however, with its consequent increase in the percentage of cholesterin, does not necessarily imply that a crystallization or separation of this substance will occur, although it does follow that the conditions are thereby made more favorable for such separation. Thus, if bile is concentrated outside of the body by heat, there is no noticeable separation of cholesterin, no formation of concretions of any kind, even though the fluid be allowed to stand until putrefaction is well under way. Evidently, certain other influences, aside from mere concentration, are needed to incite the formation of a calculus.

We may next inquire what is the primary origin of the cholesterin found in the bile? On this point there are two views. One is that the liver simply separates from the blood flowing through it the cholesterin contained in this fluid, passing it over to the bile; while the other view, held especially by Naunyn, is that the cholesterin is of local origin, being formed chiefly by changes taking place in the epithelial cells of the mucous membrane of the gall-bladder. Now it is a well-known fact that cholesterin is widely distributed throughout the body, that it is present in large amount in nerve tissue, and is apparently contained in all animal cells in small amount. This latter fact implies that it is a constant product of cellular activity, doubtless coming from the metabolism of the cell protoplasm. Further, it is constantly present in the blood, both in the blood-serum and in the corpuscles, existing there wholly, or in part, as a cholesterin-ester. Unquestionably, a certain amount of cholesterin is normally found in the liver, as a product of the chemical changes going on in that organ, but its presence in the bile is to be accounted for mainly on the ground that this is one of the channels through which it can be excreted from the body. It is apparently a waste product, and not being easily decomposable it is eliminated unchanged, or in a slightly modified form, through the feces, as well as in the secretions from the skin, and in the milk. As a constituent of the bile it has, so far as known, no function to perform; it is purely an excretion, not of the liver alone, however, but of all the cells of the body, its elimination taking place mainly through the bile, possibly because this fluid is best adapted for its solution.

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[1] *Jahresbericht über die Fortschritte der Thierchemie für* 1893, p. 331.

As just stated, cholesterin is not readily decomposed, but in the case of man, according to the recent experiments of Bondzynski and Humnicki[1], a portion of the substance undergoes modification in the intestine, appearing in the feces as koprosterin; a body closely related to cholesterin, and apparently formed from it by the addition of hydrogen. In the intestine of herbivorous animals, as in the horse, the change is still greater, the cholesterin being transformed into a body known now as hippokoprosterin, a product representing still further reduction. In the dog, on the other hand, the cholesterin of the bile appears in the feces wholly unaltered. So far as known none of these modifications of cholesterin occur in gall-stones.

Naunyn's view that the cholesterin found in bile is wholly of local origin can hardly be accepted. It certainly cannot be true of the cholesterin present in normal bile, although it may possibly be true of the cholesterin contained in gall-stones. Thus, according to Naunyn, whenever there is a retardation, or arrest, of the flow of bile, the *bacillus coli communis* of the small intestine may migrate from its ordinary abiding place to the bile passages, and even to the gall-bladder where it sets up a peculiar catarrh of the mucous membrane. However this may be, it is probably true, as stated by Mayo Robson, that the appearance of gall-stones is always accompanied by catarrh which gives rise to thick, ropy mucus. In such cases, says Naunyn, the epithelial cells are found gorged with fat- or myelin-like material, which may protrude from the cell and float off in the bile. Addition of acetic acid to such masses is seen under the microscope to cause at once the separation of a magma of cholesterin crystals. The inference naturally is that the cholesterin is manufactured in the epithelial cell as a result of perverted metabolism, but it may be, as suggested by Von Noorden, that these cells simply take up cholesterin from the blood and then throw it out in masses. However this may be, it is noticeable, as a rule, that whenever a cholesterin calculus is formed there is a nucleus of bilirubin-calcium around which the cholesterin is deposited. What now controls the formation of this insoluble calcium compound?

The normal bile pigments, bilirubin and biliverdin, when uncombined, are wholly insoluble in water. In the bile, however, they are held in solution, in part at least, by the alkali salts of the bile acids. Bilirubin and biliverdin alkali are readily soluble in water, but when soluble calcium salts are added to such a solution the pigment is precipitated as a calcium compound. Now, although normal bile contains a small amount of calcium, there is ordinarily no precipitation of the bile pigment, because of the restraining influence of the salts of the bile acids. If, however, an excess of a calcium salt is present, then precipitation may occur, insoluble bilirubin-calcium or biliverdin-calcium being formed. Frerichs, you may remember, has pointed out that the mucous membrane of the gall-bladder secretes lime salts, these passing into the bile; he states, indeed, that he has frequently observed the mucous membrane incrusted with crystals of calcium carbonate. This latter salt, however, itself insoluble, cannot be very efficacious in promoting the formation of bilirubin-calcium so long as the bile is alkalin. There is a general impression that normal bile is a strongly alkalin fluid. In one recent book on the chemistry of bile it is stated that this fluid contains about 0.2 per cent. of sodium carbonate, together with a like amount of alkalin-reacting sodium phosphate. But this is far from the truth. Indeed, the recent experiments of Jolles, as well as experiments now being carried out in my own laboratory, tend to show that bile does not contain any sodium carbonate whatever, and that such alkalinity as it possesses is due to salts of far less potency. In fact, when tested with phenol-phthalein as an indicator, the bile of man as well as the bile of the dog, cat, sheep, pig, ox, calf, etc., reacts acid. By this I do not mean that free acids are present, but that the fluid really contains acid salts, such as the alkali-hydrogen phosphate, which, however, may react alkalin to litmus and some other indicators. Now, Frerichs, you may recall, assumed that when the bile became stagnant in the gall-bladder, the mucus or nucleo-albumin secreted by the bladder induced in some manner a decomposition of the salts of the bile acids by which the reaction of the fluid became acid. In this way the solvent action of the sodium glycocholate and taurocholate upon both cholesterin and bilirubin was removed, and consequently the cholesterin separated as such, while the bilirubin came down in combination with calcium. Obviously, as Gamgee states, this acid fermentation could not originate spontaneously, but presupposes the intervention of some active agent, possibly a pathogenic organism of some kind. Further, Frerichs believed that not only must there be a pronounced stagnation of bile within the bladder, but, in addition, the coöperation of certain elements associated with catarrh of the lining membrane was required for this reaction to take place. Especially suggestive in this connection is the fact that gall-stones frequently contain in greater or less amount peculiar pigments that are rarely, if ever, found in normal bile; bodies such as the so-called bilifuscin and bilihumin which unquestionably originate from bilirubin or biliverdin as the result of changes, quite probably induced by microorganisms. Consequently, we see that the old-time views of Frerichs and the more modern views of Naunyn are not so greatly opposed to each other as would at first sight appear. In both cases the formation of the calculus is attributed to chemical changes having their primary origin in the epithelial cells of the mucous membrane of the gall-bladder and the intrahepatic ducts, associated with general stagnation of the bile. How far the production of cholesterin is dependent upon these changes is uncertain, but, assuming that the cholesterin found in gall-stones is in great part a product of the perverted metabolism of the epithelial cells, it is still evident that the initial changes leading to the formation of a biliary calculus are connected with the calcium and pigment, rather than with the cholesterin, since the nucleus of the stone is more generally composed of bilirubin-calcium. In this connection it is to be noted that the amount of calcium salts contained in the food, as well as the amount in the blood, is no criterion of the amount present in the bile. In other words, the proportion of calcium in the bile is not noticeably influenced by the amount ingested, which fact naturally suggests that the deposition of bilirubin-calcium must be connected with pathologic changes, as a result of which the normal calcium of the bile is transformed into insoluble combinations, or else, as appears quite probable, there is an increased secretion of calcium from the epithelial cells of the mucous membrane by which the formation of insoluble combinations is facilitated. With such compounds as a nucleus the crystallization of cholesterin is made possible, especially if the reaction of the stagnant bile is so altered that the sodium glycocholate and taurocholate are dissociated, and their solvent action upon the cholesterin overcome. Add to this the hypothetical production of cholesterin by the mucous membrane itself, and we have all the conditions favorable for a speedy production of biliary calculi.

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[1] "Ueber das Schicksal des cholesterins im thierischen Organismus." *Zeitschr. f. physiol. Chem.* Band 22, p. 396.

With a calculus once formed, either in the gall-bladder or in the intrahepatic bile-ducts, the question naturally arises whether its removal can be accomplished by the action of any foreign solvent. To this I think we must give a negative answer, or to be more exact, I do not think we have any positive proof that its removal can be accomplished by this method. Indeed, it seems highly improbable. Far more plausible is the assumption that its solution may perhaps be brought about, in part at least, by agencies which tend to increase the flow and alkalinity of the bile, aided by an increase in the peristaltic contractions. Cholagogue effects, however, are not readily obtained. Indeed, the most recent experiments of Stadelmann and his coworkers in Germany, as well as the experiments of Pfaff[1] in this country, tend to show that with the exception of bile itself, and possibly of sodium salicylate, there are no substances which act as true cholagogues. Thus, the supposed cholagogues, calomel, corrosive sublimate, rhubarb, podophyllin, turpentine, sodium benzoate, salol, etc., are practically inactive, and of little or no value in stimulating the secretion of bile. Quite different, however, is it with the salts of the bile-acids, for if these are introduced into the gastro-intestinal tract their absorption is speedily followed by an increased secretion of bile; and of bile rich in bile-salts with their solvent action on cholesterin and bile-pigment. Obviously, such a line of treatment could be pursued with safety only when there is a free outlet through the bile ducts.

THE INDICATIONS FOR SURGICAL OPERATIONS ON THE COMMON BILE DUCT.[2]

BY F. LANGE, M.D.,
OF NEW YORK.

OF all the achievements of surgical art, which, within the last two decades, have widened its field, principally through the influence of antiseptic and aseptic technic, there is no perhaps no single one that involves so much responsibility and requires so much painstaking labor as an operation on the deep gall ducts. It is necessary to bear this in mind and to be conscious of the difficulties and embarrassing complications which may arise during such an operation, in order to meet the exigencies of a given case, and to follow step by step the banner of clear indication; to desist in time from fruitless attempts, or, with tenacity and perseverence, to push forward in spite of all difficulties, until the desired end is achieved.

It is well nigh impossible, within the time allotted to me, to give an approximately thorough or exhaustive treatise of the subject of the surgery of the common bile duct; and I take the liberty of limiting myself to the question: Under what circumstances is surgical interference with the common duct in cases of gall-stone disease indicated?

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[1] Pfaff and Balch. "An experimental investigation of some of the conditions influencing the secretion and composition of human bile." *Journal of Experimental Medicine*, vol. 2, p. 49.

[2] Read at a meeting of the New York Academy of Medicine, April 15, 1897.

Safe and absolute indications for operation exist only when we can foresee with certainty the further development of a morbid process. Is this the case with gall-stones in the common duct? Every practitioner knows that cases of protracted jaundice, due to obstruction of this duct by stone, will frequently end in spontaneous recovery. Jaundice may persist for years, unmistakable symptoms of an infectious process in the gall-duct system may be present, and still such patients may recover without surgical interference. As long as such possibilities exist, even as exceptions, it will be impossible to give general indications for operation. The latter, therefore, is dictated or modified, or contraindicated by the clinical history of each case. Individualization is of preeminent importance; from the clinical point of view, however, and for practical reasons, two large groups of cases may be subject to general consideration: Those in which pure obstruction is the governing feature, and those in which the obstruction is complicated by inflammatory and infectious processes.

Absolute obstruction to the flow of bile for a prolonged period of time, caused by stone in the common duct, is of rare occurrence. Frequently more or less bile will pass by the stone. In other cases, owing to an intermittent ball-valve action, as described and experimentally investigated by Dr. Fenger of Chicago, the stone, by its receding from the narrow opening, will allow of the intermittent free flow of the fluid. From the observations of reliable clinicians one may justly assume that quite a large percentage of cases in which gall-stones pass the common duct, do not present any distinct icterus at all. The mechanical lesion alone, therefore, as a rule, is comparatively well borne in uncomplicated cases of stone in the common duct, and it will depend largely upon the degree of obstruction, whether the damaging influences of stagnating bile are such that the removal of the obstructing cause by operation is indicated or not. The physician in charge ought to be aware, however, that long persistency of intense icterus diminishes the safety of surgical interference through the cholemic condition of the blood and the morbid tendency to bleeding. In cases of uncomplicated obstruction of the common duct, therefore, we may formulate the indication thus: They require surgical help before persistent cholemia has increased the danger of an operation to an unnecessary and undue degree; and though icterus alone may occasionally be well borne for a long time without serious impairment of the general condition, we must, with the onset of such, determine the exact indication for surgical interference. I have had the misfortune to lose three patients after operations on the gall-duct system from uncontrollable hemorrhage due to cholemia. One of them had been subjected to choledochotomy, one to cholecystenterostomy, one to cholecystotomy. All these patients presumably would have been saved if operation had not been delayed from month to month, after all possible useless remedies had been tried for the expulsion and dissolution of gall-stones. The character of the hemorrhage in such cases is that of capillary oozing, especially from the surface of the gall-duct system or from adhesions in the abdominal cavity. I once had the impression that the sudden relief from pressure on the surface of an overdistended gall-bladder had something to do with it.

The second group of cases of obstruction are those in which complications arise, either by an infectious process, when we have to deal with cholecystitis and cholangitis in their various degrees and after-effects, or by ulceration as the direct consequence of impaction. In the latter instance it is not so very uncommon for spontaneous recovery to occur, the stone or stones passing through the wall of a neighboring viscus. To eliminate these cases we might say that they admit of expectant treatment. If a large stone has once been passed per rectum; if there should be a repetition of the attacks we may fairly assume that stones will pass again spontaneously and the obstruction be relieved. As a rule, one assumes that stones of more than moderate size will pass by a perforative process. If, however, the symptoms of intense obstruction or progressive septic infection should become very marked, an operation may be imperative.

Infection sometimes presents a decided indication for immediate surgical interference. It manifests itself by the symptoms of acute fever with frequent chills. The skin is deeply jaundiced, and the gall-bladder may be distended and readily palpable, but this symptom is absent in cases in which the walls of the viscus have become thickened by a previous inflammatory process. Such cases of acute cholangitis should be operated on at once. The first indication is to relieve stagnation and tension, and this is done by cholecystotomy. Whether the obstruction of the common duct ought to be dealt with at the same time depends upon the general condition of the patient. These cases are exceptions, but they ought to be dealt with according to surgical principles.

By far the greater number of cases are of a chronic or subacute character. The presence of a stone or stones in the common duct will keep up a permanent irritation, and chronic infectious processes will gradately spread over the surface of the gall-ducts. Dilatation of the ducts, atrophy of the glandular liver tissue, cholangitis, pericholangitis, and finally liver abscesses, usually of the disseminated variety, will be the end stages of this morbid process. We must bear these possibilities and their unfavorable prognostic elements in mind, and realize that the removal of the obstruction and the bringing about of a free flow of the secreted bile is the only rational method of treatment. With our present experience with the technic, we may safely say that choledochotomy, in the majority of cases, is a difficult and tedious operation, which may tax to the utmost the resources of the patient, but its results usually are eminently favorable. Among my successful cases I have had several in which unmistakable symptoms of chronic cholangitis existed at the time of the operation, but gradually yielded after removal of the stones, and in the course of months resulted in complete *restitutio ad integrum.*

Let me mention here the valuable observation of Riedel, that a gall-stone in the common duct will occasionally be the cause of a chronic inflammation of the pancreas, and that in such cases we may be much in doubt whether the hard mass under the examining finger indicates a malignant growth of that gland or an inflammatory thickening. It is useless to emphasize the very different prognostic value of these two affections. To differentiate cases suitable for choledochotomy from those in which it is preferable to leave the stones *in situ* and to resort to cholecystenterostomy, would, I fear, lead me too far into the discussion of the purely surgical aspect of the question, and beyond the limits of the allotted time. Let me emphasize once more, that preservation of life and health in many cases of gall-stone in the common duct depends upon the proper time chosen for surgical interference.

DISTOMA HEMATOBIUM; DESCRIPTION OF A CASE.[1]

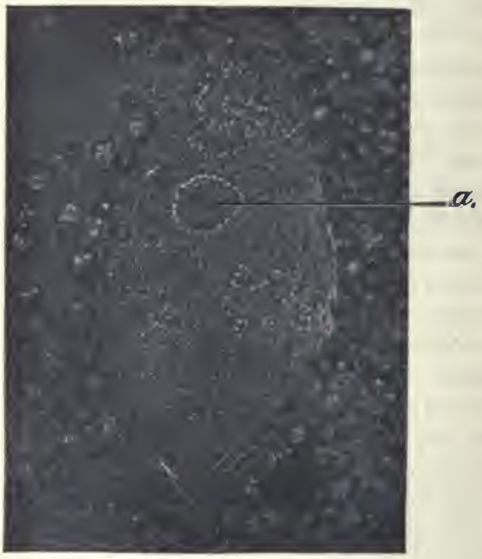
By FREDERIC E. SONDERN, M.D.,
OF NEW YORK.

THE distoma hematobium, discovered by Dr. Bilharz[1] of Cairo (1851) in the portal system, is generally named *distoma*, from the Greek δι for δις, and στομα, and should, therefore, not be called *distomum*, although Bilharz employed the latter term. Some years later, Cobbold[2] gave the species the name "Bilharzia," in honor of the discoverer; and other names, such as *gynæcophorus hæmatobius* (Diesing[3]), etc., have since then fallen into disuse.

An examination of one private library only, that of Dr. A. Jacobi, permits of the statement that "English and American text-books on medicine, urinary diseases, and clinical microscopy," are *not* unsatisfactory, as Dr. Brooks would have us believe, but, on the contrary, many offer lengthy, well-written, and well-illustrated articles which exhaust the subject thoroughly, in proof of which I refer to Harrison,[4] Roberts,[5] Cobbold,[6] Guillemard,[7] the English editions of v. Jaksch, and Ziegler, the works of Fenwick, Beale, Curtis, and Handford, as well as more than thirty-eight original articles scattered throughout English and American medical journals. A most excellent index of this literature has been compiled by J. C. Huber.[8]

The geographic distribution of the *Bilharzia*, according to Ruetimeyer,[9] includes not only the west coast, but also the east coast of Africa (Eyles[10]), particularly Egypt, where the most severe cases are observed, and Cape Colony. Wortabeh reports cases in Syria and Sicily. Blanchard does not credit the cases reported from Madagascar and Mauritius, believing them to be due to the *filaria sanguinis.* It is also doubted if the twelve cases reported by Hatch[11] *originated* in India. Nor can I find records of fully authenticated cases having originated in Arabia or Brazil, statements to the contrary notwithstanding. Hirsch emphasizes the occurrence of the parasite on the seaboard, and at the mouths of rivers, up to ten miles inland, in countries where it is endemic; Egypt seems to offer an exception to this.

FIG. 1.



Egg of the *distoma hematobium.* *a.* Beginning formation of stomach of embryo. Microphotograph × 430 diam. Zeiss apochromatic, 4 mm.

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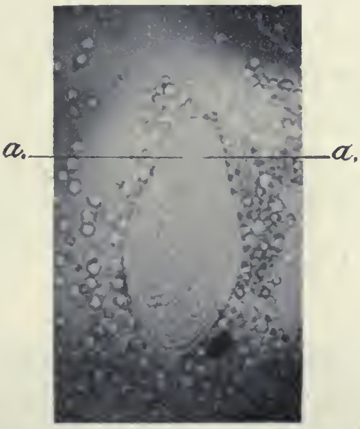
[1] The case here described is the same one mentioned in the *Medical Record* of April 3, 1897, by Dr. H. T. Brooks, who, I am told, did not see the patient but made an analysis of his urine.

Ruetimeyer concludes that the endemic origin of the disease has not crossed to the eastward of the Suez canal.

As to the etiology, Sonsino's[12] investigations during the summer of 1893 are now generally accepted, according to Ruetimeyer and others, and if so would antiquate the quotations from Lenharz. They would also allow the conclusion that the simple filtration of water, even if only through a cloth, is a sufficient prophylactic measure.

Fig. 2.



Egg of *distoma hematobium*. *a*. Development of duct on each side of embryonic stomach. Microphotograph × 230 diam. Zeiss apochromatic, 4 mm.

The anatomy of the *Bilharzia*, a unisexual trematode worm, has been carefully described even by the older authors, Fritzsch,[13] in 1888, adding more details. As these more recent descriptions are to be found in text-books they need no repetition here. Contrary to the quotations of Dr. Brooks, I would add that according to Fritzsch, the worms are oftentimes but half the length he states. They have but one sucker and one mouth, not two suckers. The female is taken up in the *canalis gynæcophorus* of the male for copulation, and, while remaining there for some time, is not *carried* there as was stated.

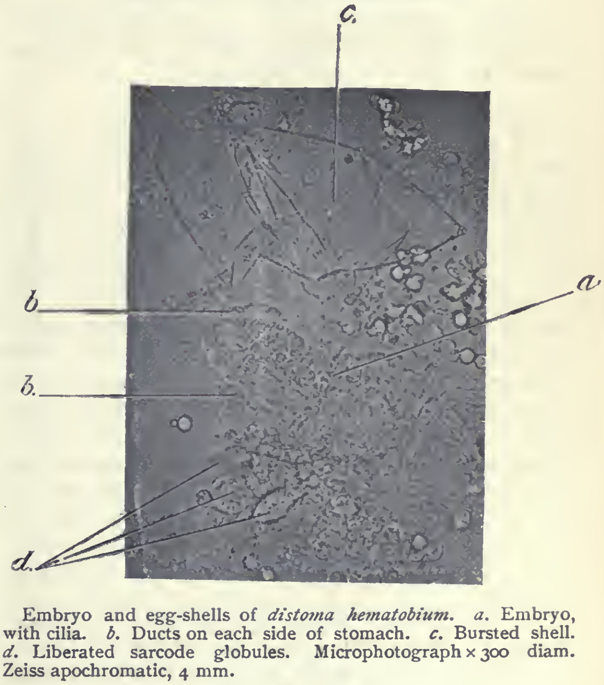
The pathologic anatomy of the condition in question is likewise of interest, and has been minutely described by Reutimeyer, to whose painstaking and original work I would refer. Contrary to Dr. Brooks' statement, Ruetimeyer and others have not been able to find pathologic conditions in the human spleen.

The following case, which is the same one referred to by Dr. Brooks under dates of March 20 and 25, 1897, has been under the continuous observation of Dr. A. Jacobi since March 22, 1897, with whom I have followed it daily since then. To him I am indebted for the careful and detailed examinations, and the privilege of reporting it. I repeat the clinical history on account of additional data.

R., male, thirty-two years of age. Born in Russia. Family history negative. General health always good. From 1885 to 1893 he resided in England. On December 15, 1893, he went by steamer, *via* Lisbon, Madeira, and Cape Town, to Port Elizabeth, South Africa, arriving on January 15, 1894. He resided there for six months. During this time he took frequent baths in the bay and river, and admits that he probably swallowed some of the water. At other times he drank both hydrant and spring water. His health was good, excepting one attack, of short duration, of severe pain in the region of the bladder, which radiated into both groins.

Leaving Port Elizabeth in June, 1894, he resided for the following six months in Kimberly, West Griqualand, during which time he was apparently well, with the exception of another attack of pain as above, without diarrhea. He also had a short attack of "fever." At the end of November, 1894, he left Kimberly for Cape Town, where he remained one week. Leaving the latter place on December 5, 1894, he proceeded by steamer, *via* Madeira and Lisbon, and arrived at Portsmouth, England, on December 26, 1894. He remained in London until January 5, and sailed from Southampton for New York on that day, arriving here on January 12, 1895. On January 15, 1895, three days after landing, he observed, for the first time, a small clot of blood at the end of micturition, without tenesmus or increased frequency of urination. This recurred about once daily at first, but gradually increased in frequency and amount for three months, since which time, for a period of two years, it has remained about the same, some blood appearing at the end of every micturition. Occasionally slight tenesmus and

Fig. 3.

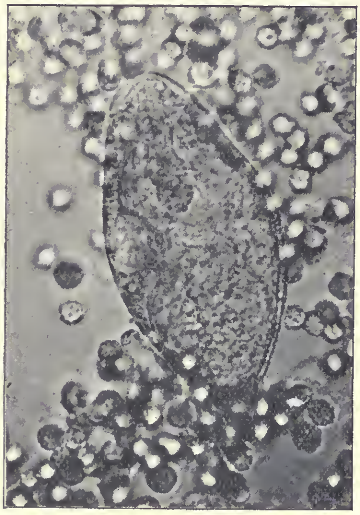


Embryo and egg-shells of *distoma hematobium*. *a*. Embryo, with cilia. *b*. Ducts on each side of stomach. *c*. Bursted shell. *d*. Liberated sarcode globules. Microphotograph × 300 diam. Zeiss apochromatic, 4 mm.

burning in the urethra has occurred. He does not recall when the urine first became turbid, but remembers that it has not been at all clear for some time, with the exception of a short period while under treatment for "cystitis and Bright's disease," at his home in Georgia.

Physical examination shows normal lungs. No enlargement of the liver, spleen, or kidneys can be found, and his general health is fairly good. A deep-seated abscess was found on the right anterior chest-wall, not mammary, as it was described. This was incised on the forenoon of March 25, 1897. Careful and repeated examinations of the pus revealed nothing pathognomonic, and this process can be considered as not connected with the *Bilharzia*. At the time of writing, this abscess is about healed. The urine voided at the time of the patient's first visit, and subsequently, was distinctly turbid at all times, sometimes tinged with blood, and contained large and small flocculi. At the end of micturition the patient passed from 1 to 10 c.cm. of blood, not coagulated. Examination of the urine revealed the following: Turbid color; amber to red; odor, not offensive; reaction, acid; specific gravity, 1016 to 1020; deposit, fairly marked, and heavy in character; urea, 0.02 to 0.024 gram in 1 c.cm., and 32 to 35 grams in twenty-four hours; albumin, present, but not more than the blood, pus, etc., would account for; sugar, none; bile, none; phosphates, considerable excess; chlorids, approximately 0.01 to 0.15 gram in 1 c.cm.

FIG. 4.

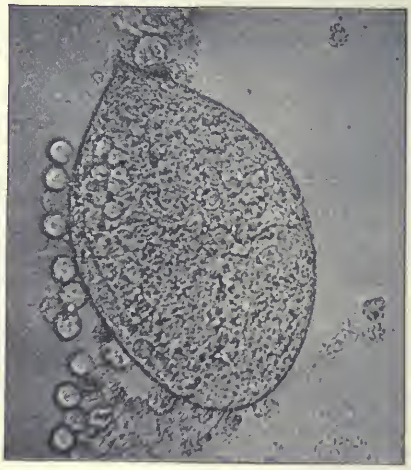


Advanced stage of development of stomach of embryo of the *distoma hematobium*. Microphotograph × 350 diam. Zeiss apochromatic, 4 mm.

Microscopic Examination.—Rather large quantities of blood, pus, and mucus, and many epithelial cells of all the layers of the bladder; also, intact aggregations of the same. Renal elements could not be found, nor were evidences of a pyelitis to be made out. The absence of a renal lesion thus indicated is corroborated by a normal daily excretion of urea as above. In addition to the above, every specimen showed a small or large number of the eggs of the *Bilharzia hematobia*, which settled the diagnosis.

These ova vary much in size, shape, and state of development, but all have a transparent shell with a terminal spine. Harley,[14] Brock,[15] Zancarol,[16] and others state that the lateral spine is only found on the eggs discharged from the bowel, and not on those found in the urine. The less developed ova show a mass of granular protoplasm, with no distinct structure on the interior of the shell, as shown in Fig. 5. The more fully developed eggs, seen in a recently voided specimen of urine, show the shell and its spine as before, containing the more distinct ovum made up of numerous round and circularly marked bodies or cells; the beginning of which may be seen in portions of Fig. 5. If this is carefully observed, even without the addition of water, in many instances, its development may be followed under the eye. There are occasional twitching movements of the mass, and then a rudimentary organ (the stomach) is seen to slowly develop at the upper end of the ovum, as seen in Fig. 1. This gradually elongates, and an advanced state is shown in Fig. 4. This is followed by the formation on each side of the above sac of two hollow spaces, which gradually develop granular contents; the beginning of this structure may be seen on one side of Fig. 4, and more complete in Fig. 6. These then elongate into two ducts, shown slightly in Fig. 2. At the same time several large round cells are developed posteriorly (Fig. 2), the so-called sarcode globules of Cobbold. Cilia then appear on the surface of the embryo. During this time the embryo executes spasmodic movements, and sooner or later the shell bursts longitudinally, whether by the efforts of the embryo, or by transudation of fluid into the shell, is not settled, and then, after escaping, the embryo moves about with furious lashing of the cilia. Fig. 3 shows the embryo with cilia, also the two

FIG. 5.



Egg of *distoma hematobium*. No distinct internal structure. Microphotograph × 350 diam. Zeiss apochromatic, 4 mm.

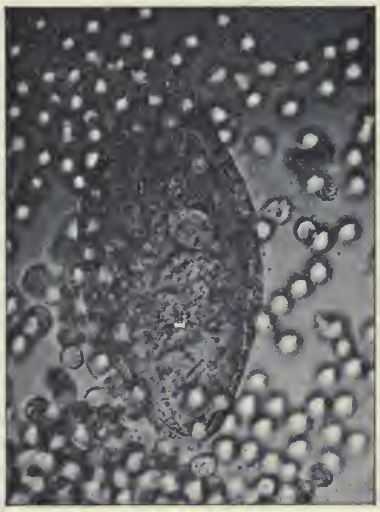
ducts before mentioned, as well as the empty shell. Soon after the liberation of the embryo it discharges the sarcode globules, also seen in Fig. 3, and continues to swim about empty for a time.

It is a most difficult task to obtain these microphotographs, as the changes the embryo undergoes are oftentimes so rapid that they have passed before the necessary manipulations for an exposure can be completed. The movements of the embryo at the time of exposure also ruin many plates.

The period of incubation of the *Bilharzia* is generally considered to be short (a few weeks). Hatch reports a case in which it was four weeks. This period for our patient has been forty-one days at the very least, counting that the infection could have occurred during his very last day on African soil.

Treatment.—Gallic acid was administered in gram doses four or five times a day, which materially diminished the amount of pus and almost stopped the hematuria. For some days methylene blue (Merck) has been given in addition. At the time of writing, the amount of pus is very much less, and for a few days there had been no blood at all, but it appeared again in very small amounts at infrequent intervals. The ova are present still in large numbers, and while they have been closely observed from day to day, I noted for the first time, on April 5th, that a small number had taken up the blue coloring matter now present in the urine. Those that do so are found to be dead; if the blue is the cause of death, or if only the dead ones take it up, I am at present unable to say. Fouquet,[17] Sonsino, and Wortabeh have written articles on the therapy of the condition.

FIG. 6.



Egg of *distoma hematobium* showing hollow spaces. Microphotograph × 350 diam. Zeiss apochromatic, 4 mm.

As to prognosis: Most of the authorities agree that many of the cases regain health with little or no treatment; in other words, barring reinfection, the condition is a self-limited disease. There are of course fatal cases where the parasite is the cause of severe cystitis, hydro- or pyonephrosis, nephritis, dysentery, severe anemia from the loss of blood, etc. Tuberculosis and carcinoma, as well as renal and vesical stones, are very common with *Bilharzia*, and in what connection they occur with the latter, whether due to a consequent irritation or to other causes is, according to quoted authorities, still an open question.

BIBLIOGRAPHY.

[1] Bilharz, *Wiener Med. Wochensch.*, vi, 49, 1856.
[2] Cobbold. "Entozoa." London, 1864.
[3] Diesing. "Revis. d. Myzhelminthen," 1858.
[4] Harrison, R. "20th Century Practice of Med.," i, New York, 1895.
[5] Roberts, W. "Urinary Diseases," 4. Edit.—"Reynold's Syst. of Med.," v, 452–472. London, 1879.
[6] Cobbold. "Parasites." London, 1879.
[7] Guillemard, F. H. H. "Endemic Hematuria." London, 1882.
[8] Huber, J. C. "Bibliography." Munich, 1894.
[9] Ruetimeyer. "Bilharziakrankheit." Basel, 1894.
[10] Eyles. *Lancet*, 1887, ii, 659.
[11] Hatch. *Lancet*, 1887, i, 875.
[12] Sonsino. *Lancet*, 1893.
[13] Fritzsch. *Arch. f. micr. Anat.*, vol. 31.
[14] Harley, J. "Med. Chir. Trans." London, 1864–69–71.
[15] Brock. *Lancet*, 1893.
[16] Zancarol. "Trans. Path. Soc." London, 1881–82.
[17] Fouquet. "France med." 1885.

HOSPITAL REPORT.

UMBILICAL SEPSIS IN THE NEWBORN, OCCURRING AT THE NURSERY AND CHILD'S HOSPITAL, NEW YORK, DURING 1896.

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IT has been the misfortune of the obstetric department of the Nursery and Child's Hospital to lose five babies from umbilical sepsis during the past year. In addition, a number of patients have presented symptoms of a milder degree of the same infection. The following facts and deductions are derived from a study of all the babies born at the hospital during the twelve months ending December 1, 1896: There have been 169 births during this period. The history charts of three of these have been mislaid, and are therefore not available. Thirteen children, born prematurely, died of inanition a few hours after birth, and six children were stillborn. There remain 147 cases for study.

The normal process of healing of the umbilical wound is of a double nature, consisting of the mummification of the stump of the cord plus the granulation of its point of attachment, and its healing by second intention. The navel of a newborn child consists of a quite prominent circular fold of skin, which surrounds and extends upward on the gelatinous cord to which it is attached quite firmly. During the mummification of the cord, the blood-vessels and surrounding Whartonian jelly dry up and become transformed into a hard, contracted, brittle mass. The attached base is separated from the living tissue underneath by a process of granulation. After the stump has separated, the central mass of granulating tissue contracts and recedes below the general skin level of the abdomen, and at the same time the circular fold of skin contracts, and finally becomes level, or nearly so. The central ulcer cicatrizes, and the navel is healed. A fixed time limit as to when this normal process should be ended cannot be determined. It is usually completed before the end of the second week of life. During this period of fourteen days every child must accommodate itself to a number of changes in its physiology, and all abnormal symptoms cannot be attributed to any one cause. Infection of the umbilicus is not uncommon, and should be thought of in the case of every ill baby under one month of age.

The pathology of the navel of the newborn child may be included in the one word "sepsis." The question is purely one of wound infection by one or more varieties of bacteria. This wound is a granulation wound, to the surface of which certain dead tissues (the cord) are adherent. The infection may be saprophytic and limited to the cord, or truly pathogenic, the germs invading the living tissue, or both forms of infection may exist at the same time. The germs of decomposition cause local symptoms in the stump of the cord; an odor of decaying animal matter and an abnormal amount of moisture is present, and there is a delay in its separation. Serious effects have not resulted to the baby from such decomposition, but the liability to pathogenic infection is undoubtedly increased by such a process. The lesions resulting from the infection of the umbilical ulcer are the same as occur in any wound. Any of the following forms of inflammation may result: Erysipelas, cellulitis, gangrene, lymphangitis, phlebitis, or arteritis.

The symptoms of umbilical sepsis may be limited to the local evidences of inflammation, or to these may be added general symptoms of a systemic infection. The local signs vary with the form of inflammation. Excessive granulation with discharge of pus, infiltration of the surrounding skin, with or without the formation of abscesses, or more or less extensive gangrene may be present. Erysipelas or lymphangitis starting from the umbilicus will present the usual diffuse or limited redness characteristic of these lesions. The very fatal inflammations of the umbilical vein and of the hypogastric arteries give no positive local signs of their existence; they may be present with any of the forms of local inflammation just mentioned. The general symptoms of septic infection are fever, loss of weight, jaundice, skin eruptions, gastro-enteric symptoms, abscesses, thromboses of the veins or arteries.

In the series of cases under consideration fever has been observed 95 times, and granulations of the umbilicus have demanded treatment 47 times. Eighteen patients showed quite decided evidences of sepsis, and of these five died. The following will show the day the cord became detached, all the patients being included in the list, except two, who died with the cord still attached: Fourth day, 2 cases; fifth, 12; sixth, 18; seventh, 23; eighth, 16; ninth, 22; tenth, 16; eleventh, 12; twelfth, 7; thirteenth, 9; fourteenth, 4; fifteenth, 2; sixteenth, 1; and nineteenth, 1. This table, which includes all cases, septic or otherwise, shows that in 119 cases (eighty per cent.) the stump of the cord came off between the fifth and eleventh days. The granulation and final healing of the umbilical ulcer has not been the subject of such careful observation as the separation of the cord. Forty-seven cases are recorded as having moist granulations after the separation of the cord, and thirty-five of these received special treatment to assist the delayed healing of the ulcer.

The first thing which becomes evident in a study of the cases is the prevalence of fever during the months of July, August, and September. During these months forty cases were recorded. Of these forty, only four cases remained free from fever reaching 100° F., or more. This real epidemic was characterized by a peculiar skin eruption, which is described below, and was coincident with the delivery in the wards of one of the patients who became ill of a very virulent sepsis, from the effects of which she died. No effort was made to connect the two events by bacterial examinations.

The fever of sepsis runs quite an irregular course, and serves more as an indication that infection exists than as a guide to the severity of that infection. It is the pulse-rate and heart action which must lead to an appreciation of the prognosis in any case. There have been ninety-five cases of fever among the 147 cases, or sixty-five per cent. These temperatures occur either during the first four days of life or develop after the first four days, or they run through both the early and the later days of the first fortnight. There were fifty-four cases of initial temperature alone, fifteen cases of later temperature, and twenty-six cases of both forms combined. Dr. Holt distinguishes one class in connection with such initial temperatures. Those cases which begin soon after birth and which cease upon the exhibition of food are designated by him "inanition temperatures," and are due to starvation. The following facts indicate that there were several causes present to account for the temperatures met with. Fifteen of the eighteen cases which were undoubtedly septic presented an initial temperature; thirty-three of the thirty-seven cases of fever occurring during the epidemic-like outbreak were initial temperatures, and in seventeen of the thirty-three patients there was a subsequent rise in temperature. Eleven of the thirty-three became infected and two died of the disease.

The relation of a moist granulating navel wound to fever is shown by the following statistics: Of the 47 cases of granulating umbilicus, 15 patients had "initial fever," 8 had a later rise of temperature, and 10 had both forms. Only 14 remained free from a rise of temperature. An average of 8 of the 18 septic cases shows that the gastro-enteric symptoms disappeared on the twenty-first day, and the bowels became normal. The remaining 10 patients continued to have undigested mucous stools as long as they were under observation. None of these cases presented the clinical picture of pyemia, so that abscesses were conspicuous by their absence. The twenty-first day was the average one upon which 11 of the 18 septic patients regained their birth weight; the remaining 7 did not regain their birth weight at all. The total loss of weight amounted to 32, 42, 11, 24, and 18 ounces in the patients dying of sepsis on the twenty-second, twentieth, nineteenth, twelfth, and fifteenth day, *postpartum*, respectively. The milder cases of sepsis showed loss of weight, but to a much less degree, the average initial loss of the 18 septic cases being 13 ounces. The average initial loss met with in the fever cases was 11 ounces, and in the non-febrile cases 9 ounces. It must be inferred, therefore, that the initial loss of weight is a fair index of the child's general condition, and that an excessive loss is characteristic of at least one serious condition, namely, a beginning sepsis.

None of these patients suffered from the severer forms of icterus, which are apt to accompany the inflammations of the umbilical vein. The four autopsies showed that the arteries rather than the vein had been attacked by the septic process. Jaundice is a very common symptom in the newborn child, and has no diagnostic value in connection with septic infection unless it develops to an extreme degree. Of the fatal cases, not one patient died jaundiced, and only one was jaundiced during the course of its illness.

Sixty-one cases of jaundice occurred in the series of 147 cases. Of these, 7 patients presented symptoms of sepsis. These 61 cases may be arranged according to the day on which the jaundice was last noted, as follows: As late as the third day in 8 cases; fourth, 5; fifth, 14; sixth, 8; seventh, 2; eighth, 4; ninth, 3; tenth, 3; eleventh, 1; thirteenth, 1; fourteenth, 4; sixteenth, 1; eighteenth, 3; twenty-first, 1; twenty-second, 1; twenty-eighth, 1, and thirtieth, 1.

There was only one form of septic eruption met with, and it occurred in 8 children born between July 17th and September 14th. The eruption was like that of pemphigus, and consisted of bullæ varying in diameter from ¼ to 1½ inches. They contained blood-stained serum. Of these 8 patients, 2 died. This outbreak was of the nature of an epidemic, as described above. The distribution of the eruption indicated the presence of a general infection, for it was not directly connected with the umbilicus. The bullæ occurred on the neck and face in five cases, and on the trunk in three. The cases did not look like those of syphilitic pemphigus, and the eruption was not present to any extent on the extremities. Two cases of syphilitic bullous eruption occurred early in the year, and each ran its course without fever as a prominent symptom.

The fatal cases present the most typical pictures of infantile sepsis.

CASE I.—The child was delivered by forceps. It lost weight from birth until the fifth day, then gained in weight one day, and finally lost daily until it died on the twenty-second day, *postpartum*. Fever began on the second day and was continuously present, except on the sixth day. The stools were always green, and the baby vomited. The cord came off on the fourteenth day, and the umbilicus showed no evidence of inflammation, except that a band could be felt extending upward along the course of the umbilical vein. The right foot became swollen, and the heel and toes gangrenous.

Autopsy.—The umbilicus appeared normal. In the umbilical vein there was a fusiform clot three inches in length. There were also small clots in the arteries, and beneath them small collections of pus in the tissues. There was a firm clot in the thoracic aorta extending down to the bifurcation, and a clot in the right femoral artery at the middle third of the thigh, extending into the popliteal space, but not beyond. The left femoral artery was free, but a firm clot in the left femoral vein extended upward to the bifurcation of the iliacs. The right iliac vein was free, and no clot was present in the inferior vena cava. There was an extensive ulceration in the colon. Cultures from the pus in the tissues showed the presence of staphylococci.

CASE II.—This child was born after a dry labor lasting fifty-eight hours. It lost seventeen ounces in three days, and continued to lose until at the time of its death, on the twentieth day, it had lost forty-two ounces. It had a low fever until the sixth day, and from the sixth day until death occurred its daily temperature ranged between 101° and 104° F. It vomited frequently and had a green, mucous diarrhea.

Autopsy.—On opening the abdomen the umbilical vein appeared to be normal. The right hypogastric artery appeared swollen and reddish for a distance of three-quarters of an inch from the umbilicus. On manipulation, grayish-brown, grumous pus escaped from the umbilicus, and a probe was readily introduced into the artery, which collapsed with the escape of its contents. The left artery contained a firm clot. A culture of the pus from the right artery showed a pure culture of the combined staphylococcus aureus and albus. The cord was still adherent.

CASE III.—The child was born in easy labor. It had lost fourteen ounces by the fourth day, but then gained in weight slowly until the sixteenth day, but never reached its birth weight. From the sixteenth to the nineteenth day it lost in weight. The first occurrence of fever was noted on the seventeenth day, and this continued until death. The bowels were never normal, and the baby was jaundiced during the first week of its life. The cord was still adherent.

Autopsy.—There was a fusiform swelling of the right hypogastric artery just below the umbilicus, which, upon being incised, allowed the escape of bloody pus. The left artery and the vein were normal. The cord was attached to the umbilicus, and at its base there was an excoriation extending about one inch in every direction. No cultures were made.

CASE IV.—Labor was normal. The child lost twelve ounces on the fourth day, and then continued to lose steadily until the twelfth day, when it died. Its temperature rose suddenly to a high point on the second day, and continued most of the time above 102° F., until death occurred. The bowels were never normal. There was no vomiting. A pemphigus-like skin eruption appeared on the fourth day upon the neck, and spread rapidly over the shoulders. The cord came off on the sixth day.

Autopsy.—On opening the umbilicus it was found to contain a discolored, yellow, liquid mass, which seemed to extend through into the artery and vein.

CASE V.—This child was born two days after the one whose history has just been given. It lost 12 ounces in weight on the third day, and 18 ounces on the fifteenth, when it died. From the third until the twelfth day it gained, but never reached its birth weight. There was an initial temperature of three-days' duration, reaching 101.2° F. From the fourth to the twelfth day there was no rise of temperature, but during the last three days the temperature ranged between 99° and 102° F. The bowels were never normal. The cord came off on the tenth day, and the umbilicus contained pus, but there was no tenderness about it. An eruption on the child's neck and abdomen, similar to that met with in the last case, began on the fifth day, but was not very extensive. No autopsy was allowed.

The plan of treatment in vogue at the Nursery and Child's Hospital is as follows: After pulsation in the cord has ceased, it is stripped of Wharton's jelly toward the placenta, and then ligated, usually about an inch and a half or two inches from the navel, another ligature being placed on the placental side. The cord is cut with dull scissors close to the first ligature. The remaining portion of Wharton's jelly is squeezed out, the cut end of the cord is thoroughly sponged with a solution of mercuric chlorid, and then thoroughly mopped and dried with sterile absorbent cotton. Some kind of powder is dusted over the stump and its base, and the dressing is completed by a wrapping of sterile cotton or gauze, which is tied on with sterile tape. The original cotton or gauze dressing is not disturbed or removed unless it becomes wet. The base is dusted only with some drying powder twice daily until the cord falls off. The baby is gently sponged twice daily with warm water, and wiped perfectly dry; it does not receive a hot bath until the cord has become detached and the umbilicus has healed.

The question of prophylaxis against infection of the navel is considered under two heads: First, the adoption of means to hasten the drying of the stump of the cord; second, the prevention of the access of bacteria to the umbilical ulcer. The accepted views of to-day concerning the bacterial causes of inflammation have led the writers of all recent text-books which treat of the subject to insist upon the importance of the last-named measure, but at the same time they have lost sight of the equally important matter of hastening the drying of the dead tissue of the cord. The routine treatment of the cord advised by these authorities consists in the application of an aseptic occlusive dressing of absorbent cotton, either sterilized or medicated with boric acid, to which is added some form of antiseptic powder.[1]

The old method of dressing the cord is well described by Dr. C. D. Meigs in his "Obstetrics," published in 1856. The dressing consists of a piece of linen four by eight inches in size, which is folded to a square. A slit is cut in the center of the double square, and then, to *quote verbatim*, "Through this slit let the remnant of the navel string be passed so as to let the double disk of linen lie upon the belly of the infant. The cord should be laid down flat upon the disk pointing upward toward the scrobich, and the linen should next be turned up so as to cover it. The right side should be turned over the cord to the left," and *vice versa*, etc. This passage is quoted in full, because of its bearing on certain conclusions which have been drawn from experiments detailed below.

Dr. M. Cohn[1] of Berlin has recently published an article on septic infection of the navel, in which he details certain experiments made to determine the conditions which influence mummification of the cord. The following experiments are, in part, a repetition of those made by him, having the same object in view: The cords of seven placentæ were taken and cut into pieces about two inches in length. A ligature was tied about the ends of each piece, which were thus made to resemble as nearly as possible the portion of the cord left attached to the umbilicus. One piece was treated in the same manner as was the stump on the child, while other pieces were given various kinds of treatment, and the condition of the separate pieces was noted daily. These pieces, wrapped in their experimental dressings, were rolled up in a flannel binder, such as is used on a baby's abdomen, and placed upon a shelf in the hospital laboratory. This room has gas burning in it during every hour of the day and night, and is always dry and warm, so that the conditions are conducive to the desiccation of any dead tissues left in it. The results obtained by treating these pieces of cord were as follows: Pieces of four cords were powdered with boric acid, bismuth subnitrate, talcum, or starch, and wrapped in absorbent cotton and flannel in the manner described. It made very little difference which form of "drying powder" was used. If anything, the talcum seemed to act quickest. Pieces of two of these cords were dressed with cotton alone, without any powder whatever, and both dried up more quickly than any of the pieces to which the powder had been applied. Pieces of three of the same cords were hung up exposed to the air; two of them in a hot, dry room became dry and brittle in twenty-four hours; the third, a piece of the thickest cord, was hung in a cold room by an open window; it also was perfectly dry in twenty-four hours, but did not become brittle until the second day. The inference is very plain, and coincides with that drawn by Cohn from the similar experiments conducted by him. *It is the access to the air which furthers the mummification of the stump of the cord, and all ordinary drying powders and all occlusive dressings are a hindrance to that process.*

In order to discover the effect of shutting off the access of air entirely, a piece of cord was hung free in a stoppered bottle. On the third day it was in a moist condition of stinking decomposition. Even such a piece of foul-smelling cord will become dry and brittle when exposed to the air for twenty-four hours. The stearate of zinc is a comparatively new drug which has been recommended for local applications; it is claimed that it permits free access of air to the wound. Pieces of these cords treated with it and wrapped in cotton became dry and brittle more rapidly than did any of the pieces mentioned above. Calcium chlorid is a powder that possesses marked hydroscopic powers. Pieces of cord treated with it became dry in twenty-four hours, and the surrounding absorbent cotton was so moist that several drops of fluid could be squeezed from it. A piece of cord hung in a bottle containing a considerable amount of chlorid of calcium was dry in twenty-four hours. Schep[1] of Berlin has recommended the use of a two-per-cent. solution of nitrate of silver on the cord twice daily. The pieces of the cord treated in this way did not show more rapid dessication than pieces of the same cord treated in other ways. Nitrate of silver failed to prevent the decomposition of a piece of cord hung in a bottle. A comparison between the occlusive properties of absorbent cotton and those of absorbent gauze resulted in favor of gauze as a dressing for the cord, thus demonstrating the advantages of the older method advocated by Dr. Meigs over that described by later writers.

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[1] As examples of these authorities, compare "Précis d'Obstétrique," by Lepage & Ribemont-Dessaignes; "Lehrbuch der Geburtshilfe," by A. Martin, and the "American Text-book of Obstetrics."

[1] *Therapeutische Monatshefte*, 1896, x, 3, 4.

These various experiments were repeated in the umbilical dressings of living infants. The results in eight cases were as follows: Stearate of zinc was used four times with satisfactory results. The cords dried up even more rapidly than the pieces of the same cords treated with the same agent in the laboratory. One cord was treated with a two-per-cent. solution of nitrate of silver twice a day. It dried up very quickly, and was brittle on the second day. The cord of another baby was left exposed to the air, through a hole in the clothing, without dressing of any kind; it was dry and brittle in twenty-four hours, as were the pieces hung up in the laboratory. Two cords were treated with powdered calcium chlorid. They dried up within twenty-four hours, but the liquefied drug soaked through the clothing of the child, and proved irritating to the skin of the abdomen, though no harm resulted from its use. Although both cords were completely dry on the first day *post-partum*, they only separated on the fourth and eighth days, respectively.

The second point in the prophylactic treatment of the umbilical wound is the prevention of the access of bacteria to it. No one can deny the necessity for this, but the means adopted should not hinder the drying process in the cord. The point of danger is the attached base of the cord, and the period of danger ends, not with the separation of the cord, but with the cicatrizing of the granulating surface beneath it.

In conclusion, it may be said that a proper umbilical dressing consists of a gauze or linen covering for the stump, applied without "drying powder." The base of the cord should be surrounded by an occlusive dressing, but the cord itself should be exposed frequently to the air. The care of the baby during its first ten days of life is important. A daily full bath should usually be omitted until after the navel is healed, and the umbilicus should be protected from all moisture, especially from the urine of the child. If the dressing on the cord becomes wet, it should be changed at once. Of all the powders experimented with, the stearate of zinc seems to be the best. Calcium chlorid is a great absorber of water, but its solutions are too irritating to allow of its being recommended for general use.

When a septic process has once begun its treatment is very unsatisfactory. All abscesses should be opened and the gastro-enteric symptoms controlled as much as possible by change of food and lavage of the stomach and intestinal tract. Drugs are of little or no value, and food and stimulants make up the whole pharmacopeia for new-born babies.

I wish to express my thanks to Drs. Edgerton, Neumann, and La Fetra of the house staff for their efficient aid in searching the hospital records, and for assistance in making the various experiments.

MEDICAL PROGRESS.

Disinfection of Soiled Linen.—BEYER (*Fortschrit. de Médicine*, No. 1, 1897) has tested different methods employed for the disinfection of bed linen and underclothing. The ordinary methods by boiling are not suited to these articles, as the presence of blood, pus, and feces causes an ineradicable stain if a high temperature is used. Soaking the garments in solutions of various soaps for one or two days failed in every instance to kill cholera, typhoid, and pyogenic organisms which were mixed with the feces with which the garments were smeared. In some cases the germs were killed when the solutions containing the linen were kept at 50° C. for a few hours. With lime-water the results were much better. Sample garments which were soaked in this solution for twenty-four hours were found to be sterilized. An equally good result was obtained in a hospital where about one-half a cubic meter of soiled linen was soaked in lime-water for forty-eight hours—or for twenty-four hours if the clothing was first rinsed with lime-water and then placed in a fresh solution. The lime-water does not injure linen or cotton goods, but shrinks woolen to such an extent as to prevent its use.

Laminectomy for Simple Fracture.—Mortality following this operation has been variously estimated at from thirty to fifty per cent. GALLAUDET, in the *Annals of Surgery*, January, 1897, says that these percentages are misleading, because the cases are not classified as regards the seat of the injury. The prognosis, if the injury is in the lumbar region, is very favorable. It grows less so the higher the injury. He reports three cases operated upon by himself, two in the lumbar region and one in the upper dorsal. The lumbar cases recovered from operation, and are living in an improved condition. The dorsal case died of shock six hours after the operation. The writer urges an immediate laminectomy in all cases of fracture of the lumbar laminæ, in which the diagnosis is reasonably clear.

The Presence of Nerves in New Growths.—YOUNG (*Journal of Experimental Medicine*, Vol. II., p. 1) has examined a number of malignant and benign tumors, in order to determine the presence therein of nerve fibers.

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[1] *Therapeutische Monatshefte*, 1895, ix, 6.

In five of ten cases of carcinoma and sarcoma and myxoma, the presence of nerves was positively demonstrated. In sarcoma, at least, the nerves seem to be as much an integral portion of the tumor substance as the sarcomatous blood-vessels. Their origin in carcinoma was not so clear, and it is possible that those seen were nerves of normal structures which were surrounded by the invading cancer tissue. This is an entirely new subject, and as yet no explanation has been given of the function of nerves in new growths, except the suggestion that they may be vasomotor in character.

Experiments upon Metabolism Made by the U. S. Department of Agriculture.—Experiments upon metabolism have frequently been made in Europe, but the first careful investigation of this sort to be carried out in the United States, according to a writer in *Science*, March 26, 1897, has recently been undertaken at Wesleyan University in Connecticut under the auspices of the Department of Agriculture. The apparatus included a so-called respiration chamber 7 x 4 x 6.5 feet, with glass doors, and containing a chair, table, and cot bed. A man can remain in this chamber for an indefinite time without inconvenience. A current of fresh air passes through the box. All food, drink, excretory products, and the currents of air are weighed or measured and chemically analyzed. The duration of the experiments varied from two and a half to twelve days. Certain days were passed in absolute rest, others in hard study, and still others in hard muscular work. Results showed that during the periods of rest the subject gained about half an ounce of protein and lost half an ounce of fat a day. With severe mental work the results were almost exactly the same. During the period of hard muscular work the food which had proved sufficient for the periods of rest and of brain work did not suffice for the needs of the body, and the subject lost daily a sixth of an ounce of protein and seven ounces of fat. The investigations will be continued, and attempts will be made to discover the kinds of food best suited to different kinds of work.

THERAPEUTIC NOTES.

Glycero-phosphates in Neurasthenia.—In the *Bulletin Générale de Thérapeutique*, February 8, 1897, BARDET denies that the glycero-phosphates have any specific action in neurasthenia. He attributes the good results which follow their ingestion to the ease with which they are disintegrated and furnish phosphorus in a ready assimilative form. In certain cases of neuralgia success has followed their use by hypodermic injection, a mode of action which is not well understood.

Glycero-phosphates probably represent the form in which phosphorus exists, not only in the nervous system but also in the nutrient fluids from which the bones draw their phosphates. It is probable, also, that the iron in a blood-corpuscle exists in the form of a glycero-phosphate. The indication for their use exists not only in neurasthenia, but also in diabetes, anemia, scrofula, and rickets. ROBIN recommends the use of a mixture of the glycero-phosphate of lime 5, soda 1.5, potassium 1.5, magnesium 1.5, and iron .75 grams twice a day.

For Nervous Hyperacidity of the Stomach:

℞	Strontium bromid (pure), . . .	ʒ iii
	Aq. menth. pip., ...	ʒ xv

Sig. Teaspoonful twice daily in milk at mealtime.

—EINHORN.

For an Acutely Inflamed Rectum:

℞	Chloral hydrate, . . .	grs. xlv to lxxv
	Tannic acid, ...	grs. xxiv
	Lime water, ...	Oi

Sig. One-fourth to one-third of this quantity is to be mixed with ℥ xii of warm water or thin starch water, and 5 or 6 ounces injected into the rectum at a time and retained as long as possible.—EWALD.

The Treatment of Nephritis with Antipyrin.—MODINOS (*Gaz. degli ospedali*, December 20, 1896) says it is not yet determined whether the various forms of nephritis are distinct diseases or variations of the same disease. Though the causes are various, the general conclusion that all cases of true nephritis are due to bacterial infection seems warranted. The multiplicity of remedies employed furnishes the most palpable evidence of the uncertainty that obtains as regards the etiology of the disease. Not one of them—tannin, sodium tannate, gallic acid, salts of lead, potassium iodid, salts of strontium, fuchsin, methylin blue, tincture of cantharides, etc.—has gained the general verdict of possessing any preeminent degree of efficaciousness. In the treatment of the various forms of nephritis we must endeavor above everything to stimulate the action of the kidneys, and, furthermore, to check the development of toxic products, and to neutralize the toxins already evolved.

For accomplishing the first two ends, a milk diet is best suited; for the neutralization of the toxic products contained in the urine, the author recommends antipyrin as the suitable remedy. After many experiments with this drug, he has found it useful in most varieties of nephritis, whether acute or subacute, primary or secondary, and also in nephritis of the postmalarial type. He gives from 12 to 20 grains daily in divided doses. Under this treatment the quantity of albumin in the urine was found to diminish, and, in a remarkably short time, to disappear altogether, together with the symptoms of renal intoxication.

Soluble Phosphate of Bismuth.—According to DÖRFLER, LEISER, and SÖHLE (*Gas. Heb. de Méd. et de Chir.*, March 18, 1887) this salt contains twenty per cent. of phosphate of soda. It is very soluble in water, and if injected under the skin of animals it does not produce any injurious or toxic effect. It has a marked astringent and antiseptic action in the intestinal canal. It is recommended in diarrhea of children, in gastralgia, tuberculosis of the small intestine, typhoid fever, and cholera morbus, and in this last infection particularly, it allays vomiting, reduces the number of stools, and favors recovery. The dose is .2 to .5 grams (3 to 8 grains) three times a day.

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OF MEDICAL SCIENCE.

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SATURDAY, MAY 1, 1897.

THE DIAGNOSIS AND TREATMENT OF CHOLELITHIASIS.

THIS subject was most admirably discussed at a recent meeting of the New York Academy of Medicine. The five papers which were presented—each one by a person competent to speak with authority upon the particular phase of the subject allotted to him—constituted a most complete and instructive symposium. All of these papers have been presented in the columns of our last two numbers, and the readers of the NEWS are to be congratulated on the opportunity thus afforded them of enjoying this condensed and interesting discussion.

Among the salient points presented was the fact that the diagnosis of gall-stones is frequently obscure and too often overlooked in ascribing the symptoms to other causes. In confirmation of this, many interesting cases were cited by Dr. Peabody, and later by Dr. Draper. In the "Chemistry of Gall-stones," so interestingly presented by Professor Chittenden, while no new facts were developed, the insolubility of the stones *in situ* was demonstrated, as was the absolute futility of any therapeutic efforts directed to that end. Agents that tended to increase the flow and alkalinity of the bile and arouse and maintain peristaltic action of the ducts were physiologically indicated. Dr. Thompson held that this could be most satisfactorily accomplished by a carefully regulated diet, appropriate doses of sodium phosphate, and horseback riding. It will thus be seen that the drift of the argument was in favor of preventive measures, all admitting the hopelessness of treatment other than surgical after gall-stones had once formed. How surgical procedures could be rendered safe and effectual in surgery of the gall-bladder and the common duct was presented and enriched from the clinical experience of those masters of surgical art, Gerster and Lange.

In the general discussion which followed, the whole subject was summed up in a masterful way by Dr. Charles McBurney. Regarding the prevention of gall-stones he thought none would suffer who form proper habits of exercise and maintain healthy elimination during the comparatively short period of gall-stone formation. The cases could be divided into two classes: those which should be operated upon and those which should not be operated upon. As a rule we must consider as inoperable those cases in which there are frequent and short attacks, with sudden relief, indicating the passage of small gall-stones, thus demonstrating the probability of obtaining relief in a similar way again. For, as a rule, when a person passed small stones he did not have large ones. On the other hand, when an operation was indicated it should be done promptly before the formation of ulcerated adhesions, or the development of cholemia. As had been pointed out by Dr. Lange, the operative dangers related to cholemia and the tendency to hemorrhage depended thereon. It was to the prevention of these conditions, or the anticipation of them by early operation, that attention should be directed if progress is to be made in the treatment of cholelithiasis. Let the medical practitioner mark well those cases which do not pass their gall-stones as the ones which should be subjected to operation at an early stage.

THE ADDED POWER OF THE STATE BOARD OF CHARITIES IN RELATION TO MEDICAL DISPENSARIES.

A DECIDED step in advance has been taken by the advocates of reform in the matter of indiscriminate dispensing of medical charity in this State in the bill that has recently passed both houses of the Legislature, and which now but awaits the signature of the Governor to become a law. This bill provides that all dispensaries, whether of a municipal or private character, shall be subject to the supervision and control of the State Board of Charities, and this body is empowered to "annul the corporation, or suspend the operations, or to revoke the license of any dispensary for wilful neglect or failure on the part of its managers, trustees, officers, or employees to comply with the rules and regulations so established."

Chapter 771 of the Laws of 1895 defined the duties and privileges of the State Charity Commissioners, but power was not given them to close any dispensary which, in their opinion, was not fulfilling the object for which it was founded. For many years an earnest effort has been made toward obtaining the authority embodied in the terms of the present bill, and now that this is all but achieved, it remains to be seen how it will be enforced.

On page 82 of the annual report of the State Board of Charities for the year 1896, which was presented to the Legislature February 25, 1897, in the section devoted to the investigation of the dispensary system, is the following: "During the last twenty-five years these institutions have rapidly increased and the competition has been so great that the question has been raised as to the real value of this method of administering relief. . . . To fulfill its proper mission it [the dispensary] should be so organized and managed that only the really sick poor should be able to secure its benefits. It has been found that managers of dispensaries rarely institute any adequate inquiry into the means or ability of patients to pay for the medical services of the physician or for the medicines which they receive. . . . It is very evident that when any so-called charities have so far departed from their original objects and purposes as to invite, or even allow, persons of wealth or moderate competence to enjoy their benefits, they have ceased to fulfill their proper functions and should be suppressed."

If the present bill becomes a law, it will go into effect on the first day of October, 1897, and as it is an open secret that the governing board of more than one long-established and powerful dispensary in this city is opposed to change in any form of the methods now in force, it is reasonable to assume that influence will be brought to bear in order to modify or abrogate such rules or regulations as may be promulgated by the Commissioners as to make them practically useless. If this should prove to be the case, and there are many who will eagerly watch the progress of the Commissioners along the rugged road of reform, it may be said without fear of contradiction that the several representative medical societies of the State, and especially the Medical Society of the County of New York and the County Medical Association, will be prepared to exert their influence and invoke such legislative action as will serve to amend and strengthen the law and thus assure to physicians and laymen alike the economic benefits that have been so long withheld.

THE ACTUAL DANGER OF AIR EMBOLISM.

For many years, text-books on surgery and surgeons in active practice have taught that the entrance of air into the veins was a most serious accident, followed in a large proportion of instances by death. Some ten years ago the writer, when engaged in making a large number of experiments in which remedies were injected directly into the jugular vein of animals, particularly dogs, noticed that in no instance was the simultaneous entrance of air followed by any particular effects. This led him to undertake researches directed to the elucidation of the question now under discussion. The results of these experiments demonstrated that very large quantities of air could be injected into the vein of a living animal without deleterious influence. Thus 20 c.cm. of air injected into the left jugular vein of a dog weighing forty pounds, produced absolutely no effect whatever save that the respiration was slightly quickened for one minute after the injection, the animal, as soon as it was set free, running about the room as happily as ever. Blood-pressure tracings taken from other animals receiving large quantities of air into their veins showed that its injection influenced very slightly, if at all, the blood pressure and pulse-rate.

A paper, detailing these experiments and giving some of the tracings, was published in the *Therapeutic Gazette* for September, 1889, and studies were also made of the effects produced by injecting air into an artery. Such an injection was always followed by the most serious results, which, according to the teachings of the late Professor Gross, were to be expected. Ordinarily, however, the blood pressure in the artery is so high that it is impossible for air to enter, except it be deliberately injected, so that, aside from deliberate experiment, the probability of air entering an artery is very remote. In the paper to which I have referred, quite a number of bibliographical references are given, and instances quoted in which the entrance of air into a vein resulted in the death of the animal or the man who received it, but it is a noteworthy fact that the great majority of these researches were made in the early part of the present century and some of them were exceedingly crude. It seems to be an undoubted fact that the entrance of very extraordinary amounts of air is capable of producing death in man and animals, and this we can readily understand, for if the cardiac cavities are entirely filled with air to the almost total exclusion of blood, large quantities of air would be driven into the arteries supplying the vital centers at the base of the brain and produce results identical with those following the injection of air directly into the carotid artery.

On the other hand, it would seem probable that air embolism is only fatal when a small globule of air entering a vein happens to plug an artery supplying a very vital point. Recently, the writer has inadvertently injected a very large globule of air into the median basilic vein of the arm in two men of advanced years, without producing death. Both cases were suffering from toxemia, requiring intravenous saline injections. In both instances there was after the injection a severe rigor, in one case immediately after the air entered the vein, in the other an hour afterward; but this symptom invariably follows the injection of saline solutions when no air is injected.

One of the most exhaustive papers which has been written upon this subject is that by Amussat, who believed that the entrance of air into the vein was an exceedingly fatal accident, but his essay was violently attacked and partly disproved by Velpeau, Gerdy, Blandin, and Mallé, who asserted that the symptoms which Amussat detailed were due to extraneous causes and not to an air embolism. By far the most exhaustive research, however, which has been published, certainly the most exhaustive in this country, is that by Dr. Nicholas Senn, whose investigations also prove that air embolism is not as universally fatal as is commonly believed. It is interesting to note that the writer of this editorial during the reading of a paper before the Philadelphia County Medical Society upon this topic some eight or nine years ago, injected no less than 40 c.cm. of pure air directly into the jugular vein of two very small dogs without giving them any inconvenience whatever, the dogs running playfully about the room immediately afterward.

The conclusions to be drawn from the researches to which I have referred, are that very large quantities of air must enter a vein to cause death, and that no such quantity is likely to find its way into a vein which has been injured by the knife of the surgeon. It would seem probable, too, that different animals and perhaps different men, have a varying resistance to the effects of air embolism. Monkeys seem to be quite susceptible to it, as are also rabbits, while horses and dogs, according to the results so far published, seem to be comparatively invulnerable. Thus we find that Cormac blew the contents of his chest twice filled into the jugular vein of a horse, before the animal exhibited any signs of uneasiness. Barthollemy has also found that in horses, as much as six litres of air must be introduced intravenously to cause death, and from this fact assumes that a man weighing 136 pounds would have to receive over one and a half pints of air into his vein before a lethal result would be produced.

An examination of the cases which are on record in which the entrance of air into the veins is said to have produced death, reveals the fact that the conclusions in few, if any, of them will stand analysis. Other causes for the sudden demise of the patient have been possibly present, and it is interesting to note how very few cases of this character have been reported since modern methods of observation have been instituted.

The instances in which death has been said to follow the entrance of air into the uterine sinuses are much more frequent, and the *post-mortem* results on record seem to be far more reliable, but even in these cases the occurrence of sudden death and the finding of gas in the uterine sinuses and veins does not by any means prove that the death was due to the entrance of air, for statistics are continually accumulating which tend to show that the finding of air or gas in the venous system or tissues, particularly the tissues of the genito-urinary apparatus, is far more frequently due to the development of the gas by the *bacillus ærogene capsulatus*, so well described by

Welch, than to the direct entrance of ordinary atmospheric air.

If it is possible, as is claimed by some, that small air emboli entering a vein produce instant death, the question arises: How is this death produced? It seems hardly creditable that the globule of air can effectually plug a blood-vessel, since it would naturally adjust itself to the diameter of it and become more and more attentuated as it passes through capillaries of smaller and smaller dimensions.

When it comes to an explanation of the fact that arterial injection of air is followed by death, whereas a venous injection is not, I confess that I am unable to advance even a satisfactory hypothesis, unless it be that the air entering the right side of the heart from the vein is most of it sent through the pulmonary blood-vessels and expired with the rest of the gas therein contained, and that it is only when so large a quantity of air is injected that some of it passes over to the right side of the heart and arterial emboli form that death results.

Some have believed that air embolism results in the development of secondary clot emboli which produce the accidents arising from arterial injections. The other theory that air acts as a poison to the brain and vital centers is scarcely tenable. Whatever results may be obtained in the future in the study of this interesting subject, one thing seems evident, namely, that air embolism is by no means as fatal as has been generally taught, and that while it is to be avoided by every possible precaution, its occurrence is not equivalent to signing the death warrant of the patient.

In conclusion, it is of interest to draw attention to the experiments recently made by McClintock of Detroit, who proved that the injection of so large a quantity as 600 c.cm. of air into the jugular vein of a horse failed to produce death and that fifteen minutes later the enormous quantity of 1200 c.cm. of air was injected without producing fatal results, although there were for a time marked disturbances of respiration. He also found that 1 c.cm. injected into the vein of a rooster produced some dyspnea followed by complete recovery; that a rabbit receiving 20 c.cm. of air into the vein died in a little less than four minutes, but that a guinea-pig, which received more than a cubic centimeter of air, recovered entirely.

These experiments made by McClintock were designed to controvert the assertion of Drs. Seibert and Schwyzer who claimed, about six months ago, that the sudden deaths which had occurred after the injection of diphtheria antitoxin were due to air embolism. Their experiments were made upon guinea-pigs, and the amount of air injected was so enormous in proportion to the size of the guinea-pig as to be far beyond the quantity which could possibly gain access to the body during the injection of diphtheria antitoxin. Thus a guinea-pig, which ordinarily weighs certainly not more than 500 grams, had injected into its jugular veins from 2 to 4 c.cm. of air, a quantity quite sufficient to entirely fill its cardiac cavities. In other words, the quantity of air which they injected into guinea-pigs would be equivalent to about 4 to 6 ounces of air into the vein of a child weighing fifty pounds.

Doubtless in the near future other studies will be made which will throw more light upon this interesting and practical subject, but the writer confesses that having seen air embolism take place in men and in animals without the serious effects usually supposed to occur under such circumstances, he has come to believe that the accident when it occurs is a far less grave event than has been commonly supposed.

H. A. HARE, M.D.

ECHOES AND NEWS.

The International Hygienic Congress.—The meeting of this association, which was advertised to occur at Madrid, Spain, in September next, has been postponed to April, 1898.

The Stuttering Habit in Germany.—An item is going the rounds of the daily press which affirms that there are more than one hundred thousand children in the national schools of Germany who stutter.

Defeat of the Optometry Bill in New York.—The so-called optometry bill granting opticians the right to refract eyes and fit glasses, which has been before the Legislature, was defeated by a vote of seventy-three to fifty-one.

Poisoned by Wild Parsnips.—William Hughes and wife and two sons, an entire family, living near Mifflin, Ind., ate freely of wild parsnips, which were mistaken for sweet anise. The father and one son lived four hours, and the mother and other son died in forty-eight hours. All suffered great agony.

Hospital Stewards to Organize.—An organization to be known as the Military and Naval Apothecaries of the State

Service has been started by the hospital stewards attached to the various regiments of militia in New York and Brooklyn. Members of the Hospital Corps of the regular army and navy have been invited to join.

Dr. Landon Carter Gray.—The many friends of Dr. Gray will be pleased to know that he has completely recovered from the severe attack of grip from which he has been suffering, and expects to attend the meeting of the Medical Congress in Washington and discharge his duties as chairman of the Executive Committee.

The Bubonic Plague Subsiding.—The total number of cases of bubonic plague in Bombay up to April 22d was 11,706, and there have been 10,020 deaths from this cause. Many of the inhabitants of Bombay are now returning to the city. The serum treatment of the disease has not met with the success that was expected.

The Chemistry and Pathology of Gout.—Dr. Luff, in his Goulstonian Lectures, delivered recently before the Royal College of Physicians in London, endeavored to establish the important deduction that the opposed qualities of meat and vegetable diets in respect to the induction of gout are due not to their proteid constituents as formerly believed, but to their inorganic salts.

Sir Andrew Clark's Biography.—A life of Sir Andrew Clark is to be added to the biographies of the year. Medical attendant to so many noted men, distinguished writers among them, it was thought that he must have left many interesting reminiscences. But it appears that he kept no journal, and that most of his notes on men and opinions are to be found on the margins of the books he read.

A Negro Woman as an M.D.—The Louisiana State Board of Medical Examiners has given a diploma to practise medicine to Mrs. Emma Wakefield, a negro woman. She is said to be the first woman of her race in the South, or, indeed, in the Union, to receive this honor. She is a daughter of ex-Senator Wakefield, and a graduate of the medical department of the New Orleans Colored University.

Increased Requirements in Medical Schools.—The Northwestern University Medical School of Chicago, otherwise known as the Chicago Medical College, has increased its requirements for admission to a standard equivalent to the requirements of the best literary colleges. Every applicant for admission must either present a diploma from some acceptable school or college, or sustain the examination.

A Chair of Vertebrate Paleontology.—The will of Edward Drinker Cope, professor of zoology and comparative anatomy in the University of Pennsylvania, has been admitted to probate in Philadelphia. He bequeaths the bulk of his estate, estimated at $100,000, to the University of Pennsylvania, and provides for the establishment of a chair of vertebrate paleontology in the Philadelphia Academy of Natural Sciences.

New York School Inspectors.—The weekly reports of these officers emphasize constantly the importance of their work. The last report shows that there were 3918 children examined. The total number excluded was 258. There were 7 cases of measles, 5 diphtheria, 1 scarlet fever, 1 croup, 2 whooping cough, 12 mumps, 31 contagious eye diseases, 169 parasitic diseases of the head, 9 of the body, 11 chickenpox, and 10 skin diseases found.

Trouble Among the Apothecaries of Chicago.—It is reported that a Chicago druggist has been condemned by a jury to to pay $1500 damages for the mistake of a prescription clerk, who used carbolic acid in a lotion for inflamed eyelids, and destroyed the sight of one of the eyes of a little child. Another druggist of the same city fares worse, a verdict for $8000 being given against him, because one of his clerks sold corrosive sublimate for calomel.

Report of the New York State Lunacy Commission.—The annual report of the State Lunacy Commission for the year ending September 30, 1896, recently presented to the Legislature, gives the whole number of registered insane on that date as 20,869, a net increase of 653 over the preceding year. The total amount expended for maintenance was $3,052,952.87; and the expenditure for new buildings, repairs, and improvements was $829,466.43.

Fire at the Woman's Medical College of New York.—The college portion of the buildings of the New York Infirmary for Women and Children, East Fifteenth street and Livingston Place, was destroyed by fire April 22d. The Woman's Medical College thus ruined was the only regular school of medicine for women in this State, and it had over one hundred students. The infirmary was founded in 1854 by Drs. Elizabeth and Emily Blackwell. The ruined building was erected by private gifts at a cost of $125,000.

The Bacterium of Mumps.—It is reported from Berlin by the correspondent of the *British Medical Journal*, that Professor Von Leyden has discovered a new diplococcus in the parotid gland secretions of persons suffering from mumps, which he takes to be the "mumps bacterium." It is distinct in appearance, and can be cultivated on the usual media. Attemps to inoculate animals proved unsuccessful. The diplococcus has been found, not only in the parotid gland secretion, but also in the pus of the inflamed gland.

The Queen's Jubilee in Edinburgh.—The citizens of Edinburgh, Scotland, are considering how to commemorate Her Majesty's long reign. Three suggestions have been made: (1) The building of a consumption hospital; (2) an extension of the Queen's Jubilee Nurses' Institute; and (3) the building of a pavilion to the Royal Infirmary for the Diseases of Women. The first-named scheme is the most needed and decidedly the most popular, 509 persons having died from phthisis pulmonalis during the year, and 320 from all other infectious diseases.

A Case of Yellow Fever at New York Quarantine.—Otis E. Bullock of Haverhill, Mass., twenty-one years old, a passenger on the steamship "Finance," which arrived April 22d from Colon, was removed, on the vessel's arrival at quarantine, to Swinburne Island, suffering from yellow fever of a most malignant type. He died soon afterward. He had been sick for several days, and had been attended by the ship's physician, but grew steadily worse. He had been a student of natural history for several years, and a few months ago joined the Frank Blake Webster company's expedition of naturalists to South America, and was on his way home.

The Semi-Centennial Meeting of the American Medical Association.—The semi-centennial meeting of the American Medical Association, which will be held in Philadelphia on the 1st, 2d, 3d, and 4th of June, 1897, bids fair to surpass in the character of the entertainment, the scientific papers, and the number in attendance any meeting which has heretofore been held. The committee in charge have been able to obtain large and roomy places of meeting for the general meetings and the section meetings all within a single block and within very short-walking distance, or immediately adjacent to the largest and most comfortable of the Philadelphia hotels. For the week preceding and following the meeting the Committee of Arrangements have also arranged for clinical courses, which will be open without charge to all physicians who may visit the city at that time.

Reduction in Steamship and Railway Rates to Moscow.—Reduction of fares for those who intend to visit the Twelfth International Medical Congress will be as follows: On French, Spanish, Norwegian, and Oriental railroads fifty per cent. On Italian railroads thirty to fifty per cent., according to distances. On Norwegian railroads a second-class ticket is valid for the first-class; a third-class ticket for the second. On the steamers of the Compagnie Générale Transatlantique, from New York to Havre, "the minimum summer rates" are charged; on its Mediterranean line fifty per cent., and on the West Indian thirty per cent. are deducted. The "Messageries Maritimes" allow thirty per cent.; the Italian line of the Mediterranean, thirty per cent.; the Constantinople-Odessa line, fifty per cent.; the Austrian Lloyd, twenty-five per cent.

A Successful Surgical Operation upon the Heart.—It is reported from Berlin that Dr. Rehe of Franfort presented a patient before the Surgical Congress, recently held in Berlin, upon whom he had operated for a lacerated wound of the heart, the first case of the kind in the history of surgery. In reporting the case, Dr. Rehe said that the man had been stabbed in the heart. In the ordinary course his death would have been certain in a very short time. He was, however, hurriedly conveyed to the hospital, where Dr. Rehe was in attendance. The doctor had him at once taken to the operating-room, where he laid bare the heart and found that there was a wound on the right side of the organ. He sewed up the wound and applied general treatment for arresting the hemorrhage. The heart worked violently during the operation, but despite the commotion of the organ the patient made good progress and soon recovered.

Obituary.—Dr. Le Roy McLean died at his home in Troy, New York, April 23d. Dr. McLean was born at Jackson, Washington county, February 12, 1831. He was of sturdy Scotch descent. He commenced the study of medicine in 1851, and graduated from the Albany Medical College with the class of 1855. He was the first in his immediate section to perform the operation of ovariotomy, in which branch he gained a high reputation, and the first in this country to open the esophagus in order to remove foreign bodies. The latter fact was noted throughout the surgical world. He performed the first successful hip-joint amputation in the war of the rebellion. Dr. McLean was a member of the American Medical Association, New York State Medical Society, the American Surgical Society, Rensselaer County Medical Society, honorary member of the New York State Association of Railway Surgeons.—Dr. Frank Abbott, Dean of the New York College of Dentistry, and a well-known physician, died suddenly April 20th, of heart disease, at his residence in New York. Dr. Abbott was born at Shapleigh, Me., September 5, 1836. His ancestors came to America in 1640, and settled in Andover, Mass. After taking his degree he removed to Johnstown, N. Y., and practised dentistry continuously there, except for the time spent in the army during the late war, until 1863. A year later Dr. Abbott removed to New York City, and took a course in medicine at the University of the City of New York. He graduated as a physician, and immediately afterward organized the College of Dentistry, to which, one year later, he added an infirmary. Of this institution he was made Superintendent in 1869. He was the author of many valuable treatises on dental and medicinal subjects, and was a member of several scientific and literary societies. He was an enthusiastic collector of rare prints relating to American history, and is said to have possessed the finest collection of its kind in this country.

CORRESPONDENCE.

AN UNUSUAL COMPLICATION OF EMPYEMA.

To the Editor of the MEDICAL NEWS.

DEAR SIR: I send you, herewith, the report of a case of empyema, following pleuropneumonia, which presented an unusual complication causing death.

Mrs. S., aged twenty-six. Family history negative. Previous health good. I first saw the patient January 20, 1897, in consultation. She had been ill for five weeks. I found her with a temperature of 101° F.; pulse, 140, and respiration, 48. The physical examination showed the right lung to be collapsed, with a considerable amount of fluid in the pleural cavity. There was a slight hypostatic involvement of the base of the left lung. The patient was coughing almost constantly, and expectorating pus by the mouthful, that smelled strongly of sulphuretted hydrogen. An exploratory puncture in the sixth intercostal space was made with an aspirating needle, and a pint of pus evacuated. This was followed by temporary relief of the cough. The diagnosis was empyema with perforation of the lung. An operation was advised, and the patient was brought to the hospital in a state of collapse. By means of oxygen inhalations and strychnin, administered hypodermatically, she rallied so that her condition was about the same as when I first saw her. Not deeming general anesthesia safe under the circumstances, I used the infiltration method. A free opening into the pleural cavity was made in the track of the previous needle puncture, from which pus was beginning to be discharged. Two drainage tubes were introduced, and the cavity drained freely. The next morning the temperature was normal, pulse 108, and respiration 32. The patient did well for forty-eight hours, when the temperature again became elevated, and the discharge from the wound was enormous, although it had lost its odor of sulphuretted hydrogen. In the discharge were many large coagula, resembling curdled milk in odor and appearance; so that a fistulous communication with the digestive tract was evident. A charcoal tablet was administered as a test, and the next morning it was washed from the pleural cavity. The patient died twelve days after the operation from starvation, not having been able to retain nutritive enemas, and nearly, if not all, nourishment given by mouth passing from the wound.

Autopsy.—Right lung completely collapsed, with numerous bands of adhesion between it and the chest wall. The pleural sac contained about twenty ounces of pus, mixed with food. The surface of the visceral pleura showed several sinuses leading into the lung tissue. At the nipple line was a point where the pleural covering of the lung was broken down, and a hernia of semidisintegrated lung tissue protruding. The stomach was opened, and water introduced by means of a fountain syringe was speedily discharged from the point above mentioned. Further dissection revealed a perforation through the lung into the side of the esophagus. The opening was circular and about one-third of an inch in diameter.

The left lung was adherent to the chest-wall over nearly the whole of its surface, and posteriorly showed signs of a beginning encysted empyema.

Very truly yours,
EDWARD B. PATTERSON, M.D.
MANISTIQUE, MICH, March 14, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

PATHOLOGICAL SOCIETY MEETING—THE COLLEGE OF PHYSICIANS' MEMORIAL TO THE SENATE—THE GROSS STATUE—KINGS COUNTY HOSPITAL APPOINTMENTS—THE WALTER GARRETT MEMORIAL BUILDING.

PHILADELPHIA, April 24, 1897.

THE Annual Conversational Meeting of the Pathological Society of Philadelphia was held on the evening of April 22d. Dr. Ludvig Hektoen of Rush Medical College, Chicago, delivered an address on "Segmentation and Fragmentation of the Myocardium." Dr. Hektoen expressed his belief that fragmentation and segmentation are two distinct processes, and that probably they occur independently, the former resulting from a loss of the intercellular cement substance of the muscular fibers. He also thinks that this lesion, which has been studied by himself and by others under varied circumstances, is capable of causing a fatal termination, and that it is the actual cause of sudden death in many instances in which there exists no demonstrable lesion. In his opinion, the capillaries of the heart, described by Meigs, are really instances of segmentation and fragmentation. Following Dr. Hektoen's address, he was tendered a reception by the Society at the University Club.

The College of Physicians is about to present to the United States Senate a memorial praying for the retention in the new Dingley tariff bill of the present law relating to the free entry into this country of books, instruments, specimens, and apparatus intended for institutions of learning. The College, with its magnificent library of over sixty thousand volumes, and its museum of pathology and surgery, fears that its usefulness will be greatly crippled should the existing law be altered.

The unveiling of the Gross statue in Washington on the fifth of next May will be an event of especial moment to the medical men of Philadelphia, and particularly to the alumni of the Jefferson Medical College, who have accomplished so much toward securing a fitting memorial to this once-distinguished member of their faculty. The trustees, faculty, and many of the alumni of this institution have arranged for a special train for the trip to the Capital on this occasion. The Secretaries of the Treasury and Navy have accepted invitations to be present at the ceremony, and it is hoped that the President will make an address. Letters from many European surgeons have been received by the secretary in charge of the proceedings, regretting their inability to be present, and expressing their highest appreciation of the services rendered to surgery by Dr. Gross. The ceremonies will be opened by a prayer by the Rev. B. L. Whitman, D.D., President of Columbian University, Washington, D.C.; the presentation of the statue is to be made by Dr. C. H. Mastin of Mobile, who initiated the movement of erecting the present memorial; the unveiling will be performed by a granddaughter of Dr. Gross, Miss Adéle Horwitz; Surgeon-General George M. Sternberg, U. S. A., will receive the statue on the part of the Government, and Dr. W. W. Keen of Philadelphia, the successor to Dr. Gross' chair in the Jefferson Medical College, will deliver an address. The statue, which is considered by those who enjoyed Dr. Gross' acquaintanceship an admirable likeness, is the work of A. Sterling Calder, a young Philadelphia sculptor of great talent.

That New York should look to her laurels is the inference drawn from the result of the recent competitive examination for resident physicians at the Kings County Hospital, Brooklyn, at which the first, third, and eighth places were won by graduates of the Jefferson Medical College. Out of a total of fifty-two applicants for the vacancies there were fifteen from Philadelphia, eight of whom were from the above-named school.

The latest addition to the group of new buildings which have been erected by the Pennsylvania Hospital during the past few years was formally opened on April 23d, with the dedication of the Walter Garrett Memorial Building. The President of the Board of Managers of the Hospital, Benjamin H. Shoemaker, presided at the exercises, and made a brief introductory speech. Dr. Thomas G. Morton, for many years a surgeon to the hospital, described the building and its uses, and gave an interesting review of the modern status of surgery. Dr. J. M. Da Costa, a member of the medical staff, paid a high tribute to the former physicians to the hospital, and mentioned in particular the special abilities of many. Dr. John B. Chapin, Physician-in-Chief of the Insane Department of the Pennsylvania Hospital, spoke of the development of this branch of the institution, and described the work of which he has charge. The ceremonies concluded with an inspection of the new building, after which a lunch was served to the visitors.

OUR VIENNA LETTER.

[From our Special Correspondent.]

EASTER VACATIONS IN VIENNA—FREQUENT HOLIDAYS IN THE AUSTRIAN UNIVERSITY—THE FIRST WOMAN TO RECEIVE A DOCTOR'S DEGREE FROM THE IMPERIAL AUSTRIAN UNIVERSITY—AMERICAN WOMEN MEDICAL STUDENTS IN VIENNA—CONSERVATISM IN APPENDICITIS.

VIENNA, April 7, 1897.

THINGS medical here in Vienna are very quiet just now. At the University the usual vacation between the winter and summer semesters is in progress, and professors are either away on a holiday or preparing quietly for the work of the next session. To an American, the occurrence of a six-weeks' vacation in the midst of the year's work seems, at first glance, to be utterly inadvisable. For us, of course, it would not answer, since it would involve the continuance of the work during the warm months. Here, however, where the heat is not a special source of inconvenience, at least not until late in July, the vacation must be a welcome break in the monotony of the ordinary routine. Holidays generally are much more frequent during the scholastic year here than they are in America. This seems to be the case not so much from deliberate forethought on the part of the University authorities as from the following of long-established usage in the matter; but one cannot help thinking that the system has its advantages. Intellectual work of a solid character is much better accomplished when broken by periods of complete relaxation than when the mental tension is maintained continuously for months at a time. It does not suit our impatient American ways, however, and not a little complaint is heard from American students here at the frequent, and what they consider unnecessary, loss of precious time.

Friday, April 2d, was, in the words of the *Rector magnificus* of the University of Vienna, "a day of special significance for the University, since on it occurred the giving of the first doctor's degree that our old and revered *alma mater* has ever conferred upon a woman." The degree was the Doctorate in Medicine, and the recipient was Gabrielle Possaner von Ehrenthal. The event marks an era in university education in Austria, and probably means the extension, in the near future, of all the Imperial University privileges to women. Considering the difficulties he had to overcome, the new sister in the profession thoroughly deserves the congratulations that she has received from all sides. She is a member of a noble Austrian family, and after preparatory studies here she continued her medical course in Zurich, as the University of Vienna was not open to her. After taking her degree, some four years ago, she applied for permission to practice in Austria, but was told that for that she must have an Austrian degree. This, of course, seemed impossible. Finally, however, she was granted governmental permission to practice in a part of the empire adjoining Turkey, and where the presence of a considerable number of Mohammedans would make her work somewhat that of a medical missionary among the unfortunate Turkish women. This privilege, as might have been expected under the circumstances, was not very highly appreciated, and her case was presented by influential friends to the Emperor himself. The well-known loyalty of her family and her own well-proven merits were enough to outweigh even the solid conservatism of Austrian institutions, and at the Emperor's request, after the usual examinations, the Austrian University's doctor's degree was granted. Coming in this way, one might have expected that the degree would have been conferred without any special *éclat;* but students and faculty were in heartiest accord in expressing the most cordial sentiments of welcome to the first sister it had been their privilege to greet.

The *Rector magnificus*, Professor Reinisch, after congratulating her on "the great energy and intelligence she had displayed in overcoming the obstacles that were in her path," said that he "was proud to hail her as the first victor in the contest for woman's intellectual rights in her native country." He added: "Man may think as they will of this important question of woman's rights, but every thoughtful and unprejudiced mind must admit that the broadening of the intellectual field of view of women will inevitably elevate the intellectual and moral standard of the whole race. We would commit a serious sin against progress if we were to confine such women as have distinguished themselves by their moral and intellectual power to the kitchen and to the nursery. It is to be hoped that what one woman receives now as a special favor will in the very near future be open to all women as a right. Wonderfully impressive words are these from a rector of the University of Vienna. They are an earnest of the time, not far distant now, when intellectual culture, whether far its own sake, or for any humane or utilitarian purpose, will nowhere be considered as the special privilege of one sex to the exclusion of the other.

The rector's address was received by the students present with impressive cheers ("*Prosit-Rufen!*"), and when the graduation exercises were over, and the newly "promoted" doctor surrounded by friends left the hall sometime after the other candidates, she was received by the students gathered in the corridors with the most cordial cheers and cries of "*prosit!*"

Despite the fact that women are not admitted to university courses in Vienna American women doctors have for fifteen or twenty years found it well worth their while to come here for advanced work. Not every opportunity that they might wish has been open to them, but their own sterling common sense, their readiness to work, their general appreciation of what was done for them, and, one must add, their thorough intellectual qualities, added more and more to their opportunities until now there is scarcely any privilege that they cannot have for the asking. Conservatism still has its hold, however, and to some of the professor' courses not even American doctoresses have been able to gain an entrance. It has not been because they have not tried hard enough, though. One wonders now whether after this graceful bow of the University authorities to the Imperial wishes this remaining exclusiveness will not finally vanish.

One of the striking things about attendance on surgical clinics in Vienna is the comparative absence of operations for appendicitis. In a large general hospital, where a number of cases are operated on each day in America, one would surely see appendicitis operations quite frequently. I venture to say that at none of our post-graduate schools, at least, does a week pass without an occasion being afforded to demonstrate that very fashionable procedure. At first one is inclined to welcome with unalloyed pleasure this failure to fall into line and to bless the thorough-going conservatism of the great surgical school that protects it from being carried away by the fancy of the hour. But the medal has its reverse, and the autopsy-room makes some impressive revelations. After one has seen on the *post-mortem* table some cases of perityphlitic abscess from ruptured appendices, with liver abscess from spread of infectious micro-organisms along the portal veins, and even abscesses of the lungs from further spread of the infecting material, one does not feel so kindly toward conservatism. Such cases must be extremely rare in America now, but here one is assured that they are often seen. Usually, of course, these patients come to the hospital in an inoperable condition, with the process so far advanced owing to medical neglect that surgical interference is not deemed advisable, but it is a cause for congratulation that the veriest country practitioner in America would not now allow a case to progress this far without rendering surgical assistance. Conservatism is all very well in its place, but when it comes to leaving untouched a collection of pus, the outlines of which can be easily traced on the abdominal walls beneath the edematous tissues that betray its presence, until it has infected other important organs, then it ceases to be a virtue. American surgeons may go too far in their enthusiasm to remove appendices, but that is surely not as bad as leaving them alone in the medieval style in vogue here.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

CASE OF TYPHOID FEVER FOLLOWING INGESTION OF OYSTERS—URETERO-PYELONEOSTOMY IN A PATIENT SUFFERING FROM HYDRONEPHROSIS—MASSAGE FOR FRACTURE OF THE CLAVICLE—TREATMENT OF A HYDATID CYST OF THE LIVER BY RESECTION OF THE INFERIOR BORDER OF THE THORAX—ACUTE ANGIOCHOLECYSTITIS CAUSED BY COLI BACILLUS, ETC.

AT the session of the Academy of Medicine held March 16th, CHATIN mentioned a case of *typhoid fever following the ingestion of oysters.* Investigation of the circumstances connected with the case revealed the fact that the oysters were grown in beds which were contaminated by the sewage of a large city. Several persons were made sick from eating these oysters, but only one died. In this instance, as well as in many similar ones which have been reported elsewhere, there was the grossest neglect of all precautions to produce healthy oysters. There is little danger of infection from oysters even when grown in unhealthy places if they are placed in pure sea water for a week before they are eaten. The sea water hinders the development of the typhoid bacillus and increases the resisting power of the bivalve.

At the session of March 30th, MONOD reported a case of *uretero-pyeloneostomy* performed by Bazy in a *patient suffering from hydronephrosis* due to defective opening of the ureter into the pelvis of the kidney. A free incision was made, the fluid evacuated, and the ureter divided and implanted low down in the pelvis of the kidney, so as to favor the escape of urine. Similar operations have already been performed a few times, and the tendency at present is to substitute some such plastic operation for nephrectomy in cases of hydronephrosis.

At the session of April 6th, LUCAS-CHAMPIONNIÉRE showed four patients who had been treated by *massage for fractures of the clavical* occurring thirteen, fifteen, eighteen, and nineteen days previously. In no case was there any pain, and the patients were able to move their arms in any direction.

PEAN said that massage was advisable in many fractures, but that it cannot take the place of the present methods of treatment in all cases; and that all the four patients presented a slight degree of projection and overlapping of the fragments, which would be very objectionable in the case of a woman.

CHIPAULT has treated seven patients suffering from perforating ulcer by stretching the plantar nerves, with but a single failure. In five cases both the internal and external plantar was stretched. Every effort should be made to cleanse the ulcer thoroughly by curettage, etc., and primary union of the wound, made for stretching the nerve, should be secured if possible.

In the Surgical Society, March 17th, RICHELOT describes a case of *peritonitis occurring in a girl aged 9 1-2 years as a result of a fall upon the stomach.* Four weeks later puncture of the abdomen produced 1.5 liters (three pints) of pus, and median laparotomy was performed. The bladder, which was adherent to the abdominal wall, was opened, but immediately closed by fine silk sutures, and three liters (six pints) of the thick pus, containing fibrinous masses, was removed from the abdominal cavity. The peritoneal cavity was washed out with a 1–10,000 bichlorid solution. The cul-de-sac of Douglas was tamponed with salol gauze by Mikulicz's method. A drain was also placed in each iliac fossa. The patient recovered.

RICHELOT objects to the use of the term "general peritonitis" in such a case as this for the pus was confined in the lower abdomen. Cultures of the pus, as well as inoculations, were negative, but the idea prevailed that the case was one of tuberculous peritonitis set up by the accident. He criticised the use of bichlorid solution for irrigation, and considered pelvic drainage better than the tamponing with gauze by the Mikulicz's method. Quéne and Reynzer were in accord with Richelot's opinion. Brun believed the case to be one of peritonitis, produced by a pneumococcus.

MONOD described *the treatment of a hydatid cyst of the liver by the resection of the inferior border of the thorax*, according to the method of Lannelongue. Incision was made through the eighth, ninth, and tenth costal cartilages, and by this means the superior surface of the liver was rendered easily accessible, even to its posterior border. By experiments made upon the cadaver, Monod determined that it is possible to resect the anterior and inferior portion of the thorax without touching the pleura. Beginning with the seventh costal cartilage, close to the sternum, one follows a line obliquely downward and outward to the chondrocostal articulations of the ninth and tenth ribs, and terminating about an inch behind the anterior extremity of the eleventh rib. If the incision be made exactly as described, the pleura will not be injured, and the convex surface of the liver will be fully exposed.

LEJARS presented a patient upon whom he had performed cholecystostomy for an *acute angiocholecystitis produced by the coli bacillus.* The symptoms presented were those of jaundice, acute pain, vomiting, and intense fever, without morning remission. The stools were scanty and pale. Bacteriologic examination of the fluid from the biliary fistula made the day of the operation gave almost pure cultures of coli bacilli. One month later the fluid from the fistula still contained only this one microbe.

At the session of the Medical Society of the Hospitals, held March 19th, MERKLEN mentioned *three cases of appendicitis occurring in the course of an attack of the grippe.* This is not a special form of appendicitis, and has no peculiar clinical features. The grippe, in fact, is no more than a predisposing cause which, by heightening the virulence of the germs normally found in the intestines, leads to an attack of appendicitis. In the three cases observed, recovery followed without surgical interference.

RENDU called attention to the difficulty of making a diagnosis of *appendicitis in hysterical subjects.* In two cases within his knowledge excessive and long-continued pain rendered the diagnosis of appendicitis almost imperative, but the physical examination was most unsatisfactory. In both cases removal of the appendix was followed by complete and lasting recovery, although the organ was only slightly congested.

Rendu thought that the pains caused by a low grade of intestinal inflammation were magnified in these cases by the hysterical nature of the patient.

TALAMON was unwilling to accept this explanation for all hysterical cases. He thought they should be placed in two classes, in one of which hysteria is the sole cause of the symptoms, and to which the name of *hysterical pseudo-appendicitis* should be applied; the other class of cases includes the two mentioned by Rendu, and should be known as appendicitis with hysterical peritoneal symptoms. In these cases, which often simulate tuberculous peritonitis, the existence of painful crises, the alternation of diarrhea and constipation, frequent vomiting, and sometimes a daily rise of temperature, renders the diagnosis extremely difficult.

At the session of April 2d MEUNIER presented the case of a child, aged eight years, who was admitted to the hospital with the obvious signs of acute tuberculosis. A few days later rose-colored spots appeared, the temperature, in the meantime, presenting the usual characteristics of typhoid fever. In spite of the absence of all intestinal phenomena, typhoid fever was suspected, and serum diagnosis was therefore resorted to on several occasions, invariably with positive results.

The autopsy showed the existence of typical miliary tuberculosis, the characteristic granules being found in the lungs, pleura, meninges, etc. The intestine was the seat of small ulcers, presenting all the characters of tubercular ulcers of the lenticular type, with gray granulations on the peritoneal envelope. Histologic examinations indicated that these were really tuberculous lesions, the walls of the ulcers swarming with Koch's bacilli. On the other hand, bacteriologic examination proved that the agglutination observed during life was the result of the presence of Eberth's bacillus, which was found in cultures in the splenic pulp and in the pulmonary and pleural liquids. There consequently could be no doubt of the typhoid infection, as indicated by the temperature curve, the eruption, and the result of the serum diagnosis, though it was completely overshadowed by the evolution of acute phthisis.

At the session of the Therapeutical Society, held March 24th, BARDET read a paper on the treatment of chlorosis and anemia, in which he stated that the therapeutic value of iron varies according to the preparation employed and the special condition of the patient. Everything depends on the absorption which itself is dependent on the digestion; and as digestion is an extremely complicated chemic phenomenon, varying with each individual, it naturally follows that a given preparation may be valuable in one case and worthless in another. Dujardin-Beaumetz employed by preference those preparations of iron which most closely resemble the iron found in the body, hemoglobin among others. These preparations are well borne by the stomach, and ingestion is the only rational method by which to administer them. Iron glycerophosphate appears to be a very good preparation, but it does not keep well. This difficulty may be overcome by giving a preparation of iron concurrently with calcium glycerophosphate.

ROBIN said that the examination of the chemistry of the metabolic changes in anemia leads to a division of these cases into two classes. The first and more important of these comprises anemic patients with diminution of the nitrogenous changes and oxidation. The second group includes anemic subjects in whom the oxidation and the nitrogenous changes are increased. Iron increases the oxidation to a marked degree, while arsenic, on the contrary, exerts a powerful moderating influence on this process. The indications for the use of one of these drugs are consequently exactly the opposite of those for the use of the other.

DALCHE reported a case of slightly albuminuric diabetes, in which four hypodermic injections of one gram (fifteen grains) of caffein in twenty-four hours produced serious cerebral disturbances, excitement, delirium, etc. In the absence of other plausable explanation, it must be assumed that the patient possessed a special idiosyncrasy for the drug.

LE GENDRE called attention to the fact that small doses of caffein, or even of black coffee, may cause disturbances of this kind.

SOCIETY PROCEEDINGS.

NEW YORK NEUROLOGICAL SOCIETY.

Stated Meeting held April 6, 1897.

THE President, B. SACHS, M.D., in the Chair.

THE STATE OF THE REFLEXES IN SUPRALUMBAR LESION OF THE CORD.

DR. JOSEPH FRAENKEL, read a paper on this subject. He said that it was a general clinical rule that interference with the conduction of the spinal cord leads to an increase in the reflex activity of the centers in the cord below the lesion. The following illustrative cases were cited:

CASE I.—A patient, sixty years of age, entered the Montefiore Home fourteen months after the onset of paralysis of the lower extremities. During the first six months he suffered from sharp darting pains in the lower extremities. Extensive bedsores developed during the last four months of life. The examination showed total motor and sensory paraplegia. There was no tenderness over the spinous processes, and no localized atrophy. The autopsy revealed caries of the bodies of the eighth and ninth dorsal vertebræ, with great thickening of the dura at this level, and with adhesions to the vertebræ for about three inches. The cord was markedly softened, and the microscope showed extensive changes, mainly of the nature of myelomalacia. Above the lesion there was secondary degeneration of the columns of Goll; below the lesion, secondary degeneration of the pyramidal tracts. The process was probably tuberculous.

CASE II.—A woman, twenty-one years of age, entered the hospital on account of transverse myelitis. The disease had developed without assignable cause nine months previously, but she had not sought relief until the involvement of the bladder. Six months after the appearance of the first symptom, she was completely paraplegic. The examination showed marked anemia, a temperature of 102° F., and an extensive bedsore over the sacrum. There was no atrophy; the lower extremities were decidedly tender, and were flexed at the hips and knees. There was total motor and sensory paralysis of the lower extremities, and loss of reflex activity, yet on tickling the soles of the feet they were drawn up. The autopsy showed a fistula at the level of the eighth dorsal vertebra leading into the spinal canal, and a very vascular sarcoma the size of a cherry, which had pressed upon and softened the tenth and eleventh dorsal segments. The microscope showed that some healthy fibers kept up the continuity of the cord.

CASE III.—The patient was forty years of age, and had a good personal and family history. Up to two weeks before admission his disease showed the familiar symptoms of marked pulmonary tuberculosis. At this time, the spinal cord became involved in the process. The examination showed the temperature to be 101° F. There was an extensive tuberculous process in each lung, and the spinal cord was tender from the lower dorsal region downward. The patient was greatly emaciated, but there was no localized atrophy. The gait was uncertain, apparently due to imperfect coordination. There were numerous areas of anesthesia and analgesia. All superficial reflexes were present, but somewhat diminished. Fairly good contraction of the quadriceps tendon could be *felt* on tapping the tendon, but it evoked no locomotion. Five days after admission, motor paralysis was found to be more extensive, and the bladder was beginning to be involved. The patellar reflex was much diminished. Shortly after this the patellar reflex disappeared altogether, and a bedsore developed. The *post-mortem* showed advanced tuberculosis in both lungs, and a pachymeningitis extending from the seventh to the tenth dorsal segments. The cord was very much softened in this region, and the microscope showed a fair number of healthy fibers. The lumbar cord was normal.

CASE IV.—This was in a boy whose trouble had developed immediately after a severe fall. On admission, the extremities presented a peculiar swollen appearance, and pitted slightly on deep pressure. There was a large bedsore over the sacrum. The temperature was 103° F., respirations were abdominal, the urine contained considerable albumin, the pupils were unequal, and the abdomen was very tympanitic. There was hyperesthesia in the upper part of the trunk, and total anesthesia below. The temperature sense was perverted. The muscles were in a state of complete flaccidity. There was total motor and sensory paralysis. When the soles of the feet were tickled the limbs were drawn up. At the autopsy the sixth, seventh, and eighth dorsal segments were found to be replaced by a fibrous band.

The foregoing cases, Dr. Fraenkel said, showed that occasionally lesions of the cord above the lumbar region did not cause loss of the reflexes. He had found reports of ninety new cases, representing a variety of pathologic conditions, distributed in widely different parts of the cord. In the old cases there was absolute loss of motility. When the continuity of the cord is completely interrupted this can be easily understood, but not so when the interruption is only partial. It seemed reasonable to infer that the motor fibers were always the first ones to suffer in a pathologic process. Sensibility was absolutely lost in all cases where section of the cord was complete. The fibers which served to conduct deep sensibility seemed to have a more specialized function, and were probably the ones most prone to suffer, next to the motor fibers, when the cord was subjected to pressure. In nearly every case it was stated that the sphincters were paralyzed. In fifty-one reported cases, and in one of his own, there was total destruction of the continuity of the cord, and in all the lesions were such as to indicate serious injury to the cord. In his opinion, Bastion's theory seemed to have met with the most general acceptance. The exact nature of the knee phenomenon was not definitely known. We know positively that the influence exerted by a higher center can inhibit the reflex, and it seemed reasonable that this superior influence should run in an arc. The centripetal branch of this arc exists in some of the ascending columns of the cord to which no definite function had yet been allotted. It should be remembered that loss of the knee-jerk in supralumbar lesions was not necessarily a matter of importance in prognosis.

DR. M. ALLEN STARR said that he had just been reading a paper, by Kocher of Berne, covering to some extent the same ground. He reported seventy cases of transverse lesion of the cord, and made very positive statements to the effect that loss of the knee-jerk is absolutely diagnostic of total ablation of the continuity of the cord above the lumbar region. Many neurologists doubt the validity of the above proposition, and hence the paper just presented is particularly timely. Bastien's statements have provoked criticism from many quarters. This paper admits the possibility of a transverse lesion in some cases causing exaggeration, and in other cases, a loss of reflexes. While this might not satisfy our theories, it is an important contribution of facts.

DR. ONUF said that Dr. Fraenkel had called attention to the *rôle* played by the cerebellum in the production of the knee-jerk. We know, further, that the pyramidal tracts have an inhibitory influence on the knee-jerk. He desired to advance a theory in this connection. We have not been able to explain many physiologic facts except by assuming the influence of so-called inhibition. One important example of this was to be found in the pyramidal tracts, particularly in those fibers passing from the cortex directly to the anterior horn cells. So far as he knew, no one had tried to supply an anatomic basis for inhibition in order to explain the occurrence of excitation in one case, and inhibition in another. Dr. Onuf said that he assumed that when a current from a cell passes from the protoplasmic process toward the nerve process, or from the cell-body to the nerve process, excitation of the cell results. If, on the contrary, the current passes from the axis cylinder or nerve process towards the cell body, inhibition is the result. These connections are not entirely theoretical—they have been actually demonstrated. He also assumed that the axis cylinder of the pyramidal fiber ends with the terminations around the axis cylinder of the anterior horn cell. The pyramidal fibers have not only an inhibitory influence on the knee-jerk, but their function is in general, not a motor, but an inhibitory one. He would say that voluntary excitation takes place through the cerebellum, and that the direct cortical spinal fibers have only an inhibiting influence. A case of absolute paralysis in connection with degeneration of the pyramidal tract has never been reported. By assuming a motor pathway, this inhibition would be found very important in finely graduating movements. We know nothing definite about the mode of termination of the fibers around the peripheral neuron. According to the theory just propounded, a complete transverse lesion, interrupting the pyramidal tracts, should cause loss of the knee-jerks. Interruption of the motor cerebellar spinal pathway should cause complete loss of the knee-jerk, for the peripheral stimulus is counteracted by the inhibitory influence of the pyramids. One fact agrees very well with this theory, *viz.:* the degeneration of cortical spinal fibers (pyramidal tracts) frequently associated with degeneration of the anterior horn cells.

DR. C. L. DANA said that Dr. Onof's theory was very ingenious, but it was open to criticism, which, however, should not be made until after further consideration. The views of Dr. Fraenkel seemed to him very similar to those of Dr. Onuf, and they were certainly very plausible. The chief problem presented was to explain those cases in which the knee-jerks are absent, and yet in which the transverse division of the cord is not complete.

DR. E. D. FISHER asked Dr. Onuf if the pyramidal tracts were no longer to be considered as motor tracts, but rather as simply inhibitory tracts.

DR. ONUF replied that the pyramidal fibers are not the motor tracts in the sense in which we have hitherto considered them. There must be at least this motor pathway, although there might be another one, through the pons, for example. When we stimulate the cortex the fiber which gives the motion is the one which passes into the pons and cerebellum and into the cord.

DR. FISHER asked why, then, with absolute destruction of the cerebellum, as had been done experimentally, we do not get absolute paralysis.

DR. ONUF replied that *all* of the cerebellum had not been extirpated in these experiments. He did not claim that the only motor pathway was through the cerebellum, but that there must be another motor pathway than the pyramidal tract.

DR. C. A. HERTER said that the cases reported by Dr. Fraenkel were very valuable. His experience certainly showed that it was possible to have a complete abolition of the patellar reflex with a partial transverse lesion of the cord above the knee-jerk center. His own impression, gained from clinical observation and from a perusal of the literature, had been that we are justified in regarding a loss of the knee-jerks in consequence of a transverse lesion high up in the cord as an evidence that that transverse lesion is a complete one. He was disposed now to think that we had perhaps been rather hasty in considering this a final conclusion. While he had some hesitancy in throwing aside the theory of the motor function of the pyramidal tract, he believed the theory presented by Dr. Onuf embodied certain valuable suggestions.

DR. JOSEPH COLLINS said that he had been particularly gratified with the paper, because when a few months ago he had ventured the statement before the Society that in cases of incomplete transsection of the cord there was sometimes absence of the knee-jerk; it was said in the discussion that this must be an error of observation. The theory that Dr. Fraenkel had proposed concerning the occurrence of the reflexes presented some anatomic difficulties. While the theory that the fiber conducts impulses in the direction in which it degenerates was no longer tenable, it seemed to him that, as a general rule, it was true. He thought we must assume some influence operating contemporaneously with the cerebellum to explain the reflexes, and possibly some function of the somesthetic area was at work, at least the explanation of "reinforced reflexes" suggested that. This was very much in accordance with the theory promulgated by Dr. Onuf. He did not think any one to-day holds that the motor tracts are absolutely and only motor. The facts of infantile cerebral palsy show that defects of the somesthetic area are not always accompanied by paralysis, if we were not in possession of much evidence of the same kind from other sources.

Dr. Starr queried if it would militate against Onuf's theory if it were considered that the pyramidal tracts are developed in animal life exactly in accordance with the development of the digital extremities. Dr. Spitzka has shown that in the seal, walrus, and elephant, the pyramidal tract is practically wanting, and develops in accordance with the motility of the digits. This fact was interesting in connection with Onuf's theory.

The President said that in spite of all the facts brought out the cases under consideration were, after all, exceptional. Granting that in the complete lesion of the cord above the lumbar level the knee-jerks are abolished, there have certainly been a number of other cases in which, although the lesion was tolerably complete, the functions were not entirely lost. In Pott's paralysis it is a common thing for the knee-jerks to be exaggerated. He had had an autopsy in a case of dorsal Pott's disease in which the cord was completely softened, yet the knee-jerks instead of being lost were exaggerated from beginning to end, and there were also contractures. For these reasons it did not seem to him wise to build up theories to explain exceptional cases. We would all be compelled to abandon the theory that the pyramidal tract conducts motion only, or chiefly. There is a fair foundation for the view that there is one corticospinal tract, and one cerebellar tract. After an examination of a large number of cases of spastic palsies, in both adults and children, he had found very few cases in which there was no paralysis. He felt positive that these cases had more paralysis than spasticity or rigidity.

Dr. Onuf said that the pyramidal tracts have been found to be absolutely absent throught the whole cord in a fetus of seven or eight months. This fact has been quoted to explain those cases of Little's disease in which there is no cerebral disease, and no paralysis, but only rigidity. It also tends to confirm the view that the pyramidal tracts are not strictly motor pathways.

Dr. Fraenkel, in closing, said that he did not doubt that any supralumbar disease of the cord will produce spastic paraplegia, but when there is a mechanical and pathologic condition interferring progressively with the conducting function of the cord, and sufficient to give motor paralysis, the knee-jerks will be lost. Where there is a total anatomic destruction of the cord, the reflexes are abolished, probably because of the cutting off of the cerebellar influence passing through the columns of Gowers. In a few of the recorded cases there was only partial destruction, yet the knee-jerks were lost as soon as the deep sensibility fibers were destroyed.

NOTES ON SOME ANATOMIC CHANGES IN THE BRAIN-CELLS IN ACUTE ALCOHOLISM.

Dr. Charles L. Dana, read a brief paper with this title, reporting ten cases, and the results of his studies in this direction during the past two years. He had used Nissl's stain for the most part. He stated that what was ordinarily known as acute alcoholic meningitis could not be said to be a meningitis at all, although clinically these patients died with all the symptoms of meningitis. The autopsy reveals simple congestion and edema of the brain, and even the microscope but rarely shows any migration of leucocytes or anything approaching encephalitis. In some cases, not even vascular activity will be observed. Alcoholic meningitis is not primarily a vascular disorder, but a slow poisoning; hence, we must study the cell to determine the changes produced. It has been stated by some investigators that all forms of cell degeneration are the same, and that it is impossible, as Nissl claimed, to make out different cell degenerations in accordance with the particular pathologic irritant. Whether this is so, or not, certainly the microscopic appearances are different in different cases of alcoholic meningitis, and in other cases associated with delirum and acute disorder prior to death. There is one type of degeneration quite characteristic of those dying from sunstroke, with intense delirum and very high fever. It consists in a distinct and general pigmentation, involving the larger cells. This sudden development of pigmentary degeneration would seem to be characteristic of acute febrile degeneration, associated with acute toxemia. Another kind of pigmentary cell degeneration was found in a case of pernicious anemia. Here, the pigmentation involved both the small and large cells. In a case of prolonged use of morphin and whisky, in which death was due to exhaustion and malnutrition, the brain showed quite a general atrophy of both the nuclei and the cell bodies. There are three types of cell degeneration, *viz.:* (1) Intense pigmentation of the larger cells, chiefly with degeneration of the cytoplasm; (2) a general cell atrophy of the body and nucleus; and (3) a good deal of change in the cell-body, with many neuroglia nuclei in the pericellular spaces. In the cases of alcoholism and alcoholic meningitis it was not possible to made out a distinct type of cell degeneration, nor could this be expected, as these patients die not so much from the alcohol as from autotoxemias, and from the febrile process.

A CASE OF MENINGITIS SEROSA ACUTA.

Drs. C. A. Herter and Ira Van Gieson reported a case apparently coming in this category. The patient was a man, thirty-three years of age, who had enjoyed good health up to a year before his admission to the hospital. While in the hospital he suddenly developed coarse clonic spasms. The feet were habitually in extension, and there was slight clonic spasm in the flexors of the thigh. There was extreme and constant deviation of the head and eyes to the right. The spasms in the arms and legs were fairly symmetrical. The pupils were equal, of moderate size, and reacted fairly to light. The pulse was slow, of high tension, and fairly regular; the respirations were stertorous. On the following day the right arm was rigid, and the left relaxed, and the coarse flexor spasm had disappeared. Then a hemiplegia developed on the left side; the pulse was rapid, feeble, and of low tension. Toward the close of the day the patient could be aroused to partial consciousness. On the third day the irregular coarse spasms of the muscles began again, and were most marked at this time on the left side instead of on the right. The right pupil was dilated. On the fourth day the condition was essentially the same, but toward evening the irritative symptoms were less marked. On the fifth day, all spasmodic movements ceased, and the patient remained comatose until death occurred. The temperature had been only moderately elevated. The autopsy was made by Dr. Van Gieson. He found over the entire frontal and central lobes a thick layer of fluid between the pia and the surface of the brain. The pia was milky, thickened, and opaque. In the occipital and temporal regions this membrane was quite normal. The fluid was most abundant in the frontal region, but was nearly uniformly distributed over the whole center. The vessels and pia mater of the base were normal. The substance of the brain was pale, and the convolutions only slightly flattened. Microscopic examination showed the vessels of the pia to be largely obliterated. This effusion appeared to have occurred at the time of the onset of the acute symptoms. Probably the hemiplegia was due to pressure on the cortex. A similar case had been reported in which the effusion had apparently been due to an infection.

Dr. Dana said that he had seen quite a number of cases of alcoholism presenting an almost identical pathologic condition, although such a serious condition of the brain was not the rule in alcoholism. The clinical symptoms, however, did not permit of a differential diagnosis, nor did they indicate a sudden effusion.

Dr. Starr said that in operations on the brain, a varying amount of fluid would be found under the pia, irrespective of the lesion present. Slight manipulation of the brain by the surgeon would cause a disappearance of this fluid. For this reason he did not think much stress should be laid upon similar pathologic findings.

HEMORRHAGE INTO THE LATERAL VENTRICLES OF A NEWLY BORN INFANT.

Dr. Herter presented a specimen illustrating this condition. The child had been born at six months, and had lived in an incubator for a week. Labor had been difficult, but without forceps. A day or two before death extreme flexion of the toes and right index finger had been noted together with a general and marked icterus. The autopsy showed nothing abnormal except in the brain. In the latter was a hemorrhage which accurately filled both ventricles.

The President remarked that hemorrhage into the brain had been reported as having occurred at some period of fetal life.

REVIEWS.

Reference-Book of Practical Therapeutics. By various authors. Edited by Frank P. Foster, M.D. Two volumes. New York: D. Appleton & Co., 1896.

This is one of the most practical books on therapeutics that has appeared in recent years. It is especially designed for practising physicians, devoting its chief attention to therapeutics, and only regarding the physical properties of drugs in so far as these may have more than a pharmaceutical interest. Thus, the busy practitioner is saved a good deal of time, by not being compelled to wade through a mass of, to him, unimportant data connected with the physical properties and minerologic and botanic relations of the various drugs.

The authors who have assisted in this work are for the most part teachers of therapeutics in the various institutions of the country, and are specially noted for inculcating the facts that nihilism in therapeutics is inimical to medical progress, and is unscientific.

The various remedies treated are arranged in alphabetical order, making this work one in which reference is easy.

Some of the articles are more elaborately treated than others, and not always commensurate with their importance. As a rule, however, much-used therapeutic remedies receive the most attention at the hands of the various authors.

The reviewer may justly say that this work will be of very valuable assistance to every practising physician who employs it, for it embodies all the recent discoveries in practical and physiologic therapeutics; gives the most important therapeutic features and indications for the use of the various remedial agents, and this in a form so readily accessible that it is worth, in the saving of time, more than the cost of the book.

It is almost needless to say anything about the typographic features or the binding. The name of the publishers is its best recommendation in this regard.

Skiascopy and its Practical Application to the Study of Refraction. By Edward Jackson, A.M., M.D., Professor of Diseases of the Eye in the Philadelphia Polyclinic, etc. Second edition. Philadelphia: The Edwards & Docker Co., 1896.

The appearance of a second edition of this excellent manual shows that more general interest is being taken in the practical application of the shadow-test to the determination of ametropia, as well as in the theoretical study of the procedure. The advantage of skiascopy, its objectivity, accuracy, and rapidity have long been recognized. The lack of a good handbook was, however, an important factor in preventing its general adoption. Jackson's work, while concise and clear, is based on scientific principles, and shows the practical grasp of the subject due to experience with its working methods. The use of both the plane and the concave mirror is explained with reference to graphic representations in each case.

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ORIGINAL ARTICLES.

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ADAPTATION IN PATHOLOGICAL PROCESSES.[1]

BY WILLIAM H. WELCH, M.D.,
OF BALTIMORE.

ADAPTION in pathologic processes has the broadest biologic as well as medical interest. By the epithet "adaptive" it is intended to describe those morbid processes that bring about some sort of adjustment to changed conditions due to injury or disease. While it has been contended that the conception of adaptation has no place in science, I believe that natural phenomena must be investigated with regard to the meaning or idea which they represent.

From physiology we learn that the most wonderful and characteristic attribute of living organisms is their capacity for adaptation to external and internal conditions in a way tending to the welfare of the individual or species. Apparently these countless adaptations are full of purpose. So far as the existing order of nature is concerned, this theory is the foundation in forming a working biologic hypothesis. This seems an explanation of organic evolution. Physiologic adaptation occurring in organic evolution gives us the keynote to pathologic adaptation.

It is my opinion that those vital manifestations known as adaptive and compensatory are the necessary results of the energy inherent in living matter. The final result in no way directly influences the chain of events which leads to its production, nor does the character of the result in any way explain the mechanism.

Reviewing the history of the knowledge which we possess regarding protective processes and the methods of study by which this knowledge has been obtained, our attention is called to the importance of the new fields of research styled the mechanics of organic development and physiologic or experimental morphology.

One of the most interesting characteristics of pathologic adaptations is their foundation in physiologic processes—a fact of fundamental significance. Variation, natural selection, and heredity have in no direct way influenced pathologic adaptations. As an illustration of the foregoing, an individual born with exclusive capacity for cardiac compensation could not perpetuate such a variation through the survival of the fittest unless heart lesions became common to the species. Contrasted with the perfection of physiologic adjustments, pathologic adaptations are markedly imperfect. The cells of the body are its only means of protection from outside attacks or in restoring its damaged parts, but their fitness for this function comes primarily from physiologic properties. Cardiac compensation is never perfect; renal hypertrophy never produces a healthy organ. The most striking example of such imperfection is found in the excesses, disorders, and failures incident to inflammation. The preeminent examples of pathologic adaptation are the compensatory hypertrophies, the regenerations, and the protective processes, including parasitic and antitoxic phenomena, with some manifestations of inflammation and fever as well as changes in internal secretions. Chief among compensatory hypertrophies are those recognized as work hypertrophies. To complete our understanding, we must know the nature of the disturbances caused by the underlying morbid conditions, how they excite increased activity, and what the relation is between this activity and the growth of the part. In the present state of our knowledge, in no instance can these requirements be completely met. This statement is again illustrated by the study of cardiac hypertrophy. In general, I believe that cell-growth attending work hypertrophy must start from physical or chemical changes in the muscle or gland cells, and is directly connected with increased function. Increased supply of blood or lymph is not a determining factor. The final result is the necessary consequence of the underlying morbid condition. We possess a satisfactory mechanical explanation for the essential steps in the process, and there is no reason to assume that other than mechanical factors are concerned in those manifestations not explained by known physical or chemical forces. Cell properties which determine the character of their response to changed conditions, are their well-known physiologic properties. The adaptation resulting is imperfect and not a complete compensation. Vascular hypertrophy and pathologic changes well exemplify the propositions stated. This is seen to great advantage in the study of the placenta and embryo.

Of paramount interest at the present time is the application of these conclusions to the study of inflammation. This still remains an unsettled question. Between purely clinical and purely pathologic and experimental views, antagonism exists. From the clinical standpoint, inflammation is harmful. The pathologist and bacteriologist find in its phenomena a struggle for self-preservation. Modern knowledge teaches that the response of the cells in inflammation is made necessary and inevitable by their innate properties. Some of these protect them in mechanical and other injuries. As a whole, inflammation is an adaptive pathologic process without special fitness to justify us in extravagant statements upon this subject.

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[1] Abstract of presidential address delivered before the Congress, May 5, 1897.

In conclusion, I wish to emphasize the fact that the healing power of Nature is often, under the circumstances present in disease, most incomplete and imperfect. Treatment based upon the idea that Nature is doing the best thing possible and should not be interfered with, rests often on an insecure foundation. In the light of modern knowledge, there is ample scope for the intervention of the physician and surgeon.

LESIONS OF THE RETINAL VESSELS, RETINA AND OPTIC NERVE, ASSOCIATED WITH GOUT.[1]

BY CHARLES STEDMAN BULL, M.D.,
OF NEW YORK.

AT the meeting of the American Ophthalmological Society held in 1893, the writer presented a paper on "Gouty Retinitis and Neuro-Retinitis," in which he gave a somewhat detailed *résumé* of our existing knowledge of the changes produced in the vascular system by the influence of the gouty diathesis. For a full account of these changes, and of the investigations of various observers in this direction, he would refer to the above paper, which was published in the "Transactions of the American Ophthalmological Society" for that year. In the four years which have elapsed since the paper was published, the conclusions which the writer then reached have been strengthened, and he can speak still more positively of the changes in the retina and optic nerve, and in the retinal vessels, which are not infrequently met with in gouty patients.

The pathologic condition of the blood in gout does not always manifest itself in a way that readily attracts attention, and this is particularly true in regard to the eye. Most authors who refer to retinal complications, occurring in the course of gout, mention only a hemorrhagic retinitis as being the most frequent retinal complication. I do not think that there is any doubt as to the existence of a gouty retinitis or neuroretinitis, which strongly resembles certain types of syphilitic retinitis, and which may or may not be accompanied by retinal hemorrhages and opacities in the vitreous humor. The occurrence of retinal hemorrhages is easily explained, for it is well known that gouty persons are prone to hemorrhages, venous obstruction, and irregularities of the circulation, due to great arterial pressure and a relaxed condition of the vascular walls; vitreous opacities may be present in these cases. Such hemorrhages may involve one or both eyes, and are of sudden onset. Small linear and flame-shaped extravasations of blood may be scattered all over the fundus. At the same time, the optic discs may be hazy, and the retinal veins engorged and tortuous.

The effects of the poison of gout upon the vascular system are: (1) A high blood pressure in the arteries; (2) hypertrophy of the left ventricle; (3) hard incompressible arteries undergoing atheromatous degeneration.

The influence of gout in the development of arteriosclerosis and endarteritis is now well-established. Arterial degeneration is hereditary in certain gouty families, and signs of arteriosclerosis are very often the first symptoms of the hereditary malady. Most of our knowledge of this condition of the arteries has been gained from Thoma's investigations, and we now recognize the fact that arteriosclerosis is caused by some general disturbance of nutrition, which is partly the result of infection, intoxication, and other pathologic lesions as yet but little understood, and partly the accompaniment of senile changes. We learn from Thoma that gout may be looked upon as the remote antecedent of endarteritis, and that the latter condition is by no means always reached through the medium of interstitial nephritis.

Changes in the constitution of the blood current, such as are met with in gouty patients, would be very likely—in fact, almost certain—to develop obstructive circulation in the capillary system. This condition of the capillary circulation must cause some change in the blood current in the arteries. Whenever the current is slow, the middle coat of the artery usually contracts, and when this does not occur, a new growth of connective tissue is developed in the tunica intima, which thus reduces the arterial caliber. The muscular coat of the artery first becomes involved, and the loss of elasticity permits the artery to dilate. As a result, the blood current becomes slow, the vasa vasorum are distended, and a new growth appears in the intima, and is followed by the same process in other coats. A similar condition is met with in the veins, and, in fact, the phlebosclerosis or endophlebitis may precede the endarteritis sometimes by a lengthy period. Both these conditions, endarteritis and endophlebitis, are found much more frequently in the retina of persons who suffer from chronic, non-inflammatory, atypical gout than in those who are afflicted with the typical inflammatory form of the disease, and the same thing is asserted to be true of the types of interstitial nephritis. One of the results of this retinal endophlebitis is edema of the retina, which is one of the constant symptoms in the early stages of the disease. The circulation may become reestablished through the obstructed vessels, in which case this edema disappears; but if the obstruction to the blood current becomes permanent, the distant venous branches become dilated, and in places varicose. The hemorrhages which are met with are due to local softening of the vascular wall, or to the rupture of these minute varicose dilatations. They may be of all shapes and sizes—small and punctate, linear or flame-shaped—and may be scattered all over the fundus.

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[1] Read at the Fourth Triennial Congress of American Physicians and Surgeons, Washington, D. C., May 4, 1897.

The scope of this paper is limited, and is confined to a consideration of the changes in the retinal circulation, in the retina itself, and in the optic nerve, as seen with the ophthalmoscope. The literature on the subject is very scanty. None of the older authors mention retinal complications in gout, and until very recently none has been made of any changes in the retinal vessels. Gauté (*Thesè de Paris*, 1881) speaks of a gouty retinitis resembling syphilitic retinitis, which may or may not be accompanied by opacities of the vitreous and retinal hemorrhages. Lychon (*Thesè de Paris*, 1885) mentions neuroretinitis and intra-ocular hemorrhages as being due to gout. Nettleship ("Diseases of the Eye," fourth edition, 1890) says: "Hemorrhagic retinitis is more commonly met with in gouty persons than in others. It may be uniocular or binocular. The children or descendants of gouty persons, without being themselves subject to gout, are liable, in early life, to this insidious form of eye disease." This view is confirmed by Jonathan Hutchinson. Gowers ("Medical Ophthalmoscopy," 1890) speaks more positively in regard to retinal lesions in gout. He thinks that the characteristics of these cases are a greater degree of disturbance of vision than corresponds to the visible changes in the fundus, the tendency to irregular defects in the field of vision, and the presence of lesions of the retina and optic nerve of the other eye induced by a symmetrical morbid process. Galezowski (*Annali di Otalmologia*, XIX.) believes that the changes begin in the retina and extend to the choroid, giving rise to a retinochoroiditis, characterized by an alteration in the vessels and deposits in and outside their walls. All around the macula and along the vessels are brilliant patches of exudate. The inflammatory process occupies the central zone of the fundus, develops slowly, usually involves both eyes, and never ends in total blindness, as the periphery of the retina is rarely affected.

In the *Bericht der 25ten Versammlung der Ophthalmologischen Gesellschaft*, Heidelberg, 1896, Wagenmann has a very interesting article on "Eye Diseases in Gout," in which he admits that the diagnosis is not always easy in cases of atypical gout. After a careful study of the subject, he is convinced that the blood current containing an excess of urates irritates and inflames the tissues; or else the uric acid and other products of animal combustion are extravasated in minute quantities in the tissues. The inflammatory process may be so marked that relatively large deposits appear in the tissues. The origin of these deposits in the eye is best explained by the Ebstein theory, according to which the blood with excess of urates sets up an inflammatory process in places where the circulation is slow. The well known changes are seroplastic inflammation, and a deposit of what Wagenmann calls "concrements." This is undoubtedly the cause of the patches of exudation, the numerous small hemorrhages, the narrow arteries, and the marked venous hyperemia seen in the retina, and also of the recurrent vitreous opacities, which are often of a distinctly hemorrhagic character. In the discussion which followed this paper of Wagenmann, Nieden, in agreeing with the author of the paper, stated that he regarded the recurring retinal and vitreous hemorrhages as almost pathognomonic of gout. Pflüger and Hirschberg also endorsed the views entertained by Wagenmann, and the latter called special attention to the presence of glistening inorganic deposits in circumscribed patches irregularly arranged around the macula lutea in gouty patients.

In my paper, previously referred to, the detailed clinical history of five cases, and the reports of two autopsies, were given, with the results of the microscopic examination of the retinæ and optic nerves. In the four years which have elapsed since that time, I have added to my data on the subject the histories of ten other cases, with the report of one autopsy.

The lesions to which I wish to call the attention of the Congress are: (1) The changes in the walls of the blood-vessels of the retina, choroid, and optic nerve, including arteries, capillaries, and veins. (2) Retinitis of a peculiarly localized character, confined to the posterior zone of the fundus, with or without hemorrhages in the retina and vitreous, and characterized by a peculiar yellowish exudation, occurring in clearly defined patches. (3) Optic neuritis, generally with, but sometimes without, an accompanying retinitis.

The clinical history of the ten additional cases, on which this paper is based, resembles very closely that of the five original cases reported in the first paper, and the main facts are briefly repeated here. The subjective symptoms consisted in a deterioration of the vision, at first for small-sized type, but later for all objects at any distance, and a certain degree of photophobia, most marked for artificial light. The ophthalmoscope shows more or less marked blurring of the outlines of the optic discs, resembling the first stage of papillitis, but without the edematous swelling. The retinal arteries are diminished in caliber, in some places the lumen being reduced to the merest thread, and requiring the closest examination to see the minute blood column that still exists. The white lines along the vessels, both arteries and veins, are broad and distinct, and extend from the center of the papilla well out toward the periphery of the fundus. Occasionally the veins in places seem dilated like a fusiform aneurism, the vessel on both sides of the dilatation being reduced in caliber. Yellowish-white patches of exudation, at first brilliant but subsequently becoming dull, of varying size and shape, are seen grouped mainly about the region of the macula and disk, but with no systematic arrangement. These patches of exudation are entirely in the inner layers of the retina, as proved by the microscope. If hemorrhages are present, they are linear or flame-shaped in character, occur close to the vessels, both arteries and veins, and while mainly grouped around the posterior pole of the eye, are sometimes found scattered all over the fundus. If opacities of the vitreous are present, they are of the floating variety, are small and of varying shape, and may be either the result of previous hemorrhages, or an evidence of coexisting choroiditis. The ophthalmoscopic picture in these cases is that of general retinal angiosclerosis, with the addition of the glistening patches of exudation in the retina.

These patients had all shown signs of extensive degeneration of the walls of the blood-vessels throughout the body, notably in the temporal and radial arteries. Their urine was usually of moderately high specific gravity, ranging from 1020 to 1026. It was loaded with uric acid and phosphatic acid crystals. I have occasionally found a little albumin, but never any sugar or casts.

Of the five patients whose cases were originally reported, two died previous to the presentation of the first paper, and the results of the autopsies have been published. Since then two other patients have died (Cases II. and III.), both of cerebral hemorrhage. The other patient (Case I.) is still living, and possesses enough vision to assist him in going about. Of the ten patients seen since the presentation of the first paper, three have died, one from pneumonia and two from cerebral hemorrhage. I was fortunately able to secure an autopsy in one of the latter cases, and was permitted to remove the posterior part of the eyeballs and the optic nerves for examination. The results of the microscopic examination were almost identical with those of the two cases previously reported. Sections made of the retina, choroid, and optic nerve showed very extensive angiosclerosis. The adventitia and media were decidedly thickened, but the main increase was in the intima, which in many places was so marked as almost to obliterate the lumen. The proliferation in the adventitia was largely granular, while the thickening in the intima was mainly due to hyalin deposit. Numerous fusiform aneurismal dilatations were found in the arteries, almost always at the point of origin of a branch; and on the distal side of these dilatations the caliber of the vessel was markedly narrowed. There were a number of hemorrhages, always close to the vessels. The nerve fibers on the papilla and in the retina were markedly varicose, and the spaces between them were filled by finely granular matter. In the retina the nerve-fiber layer was thickened by infiltration with a mass of fine granules, aggregated in heaps, with occasional distinct cells filled with the same granular contents. These masses of fine granules extended through all the layers of the retina except that of the rods and cones, most of them, however, being in the nerve-fiber layer. Sections of the optic nerves at various points as far back as the chiasm showed the same changes in the walls of the blood-vessels, and more or less marked varicosity of the nerve-fibers, and small masses of fine granules. The choroidal blood-vessels showed the same changes of general angiosclerosis. No patches of exudation were found anywhere in the chorioid, such as existed in the retina.

The following brief conclusions have been drawn from the cases presented: (1) The changes in the fundus are always bilateral, though rarely symmetrical in the two eyes. The lesions may begin simultaneously in the two eyes, but this is by no means always the case. (2) The degenerative changes in the walls of the blood-vessels, both arteries and veins, are at first very minute, and are often overlooked. They must be carefully searched for, as they begin in the intima. (3) The general angiosclerosis, and the patchy exudation in the retina, cause marked impairment of central vision, but little impairment of the peripheral vision, and the disease never ends in blindness. (4) The loss of central vision is always progressive up to a certain point. Improvement of the vision, after the retinal disease is established, cannot be expected, though in favorable cases the existing vision may be maintained. (5) Hemorrhages into the retina are rare except in the comparatively early stages of the disease. When the vessels lose their elasticity by reason of the increase in the thickness of their walls, due to the deposits, the vessels become stronger and more rigid, and hemorrhages are no longer to be feared. (6) The most marked feature in the ophthalmoscopic picture is the development of the angiosclerosis in the vessels of the retina. This condition is confirmed by the microscope, and is seen to extend to the vessels of the optic nerve and choroid. (7) Another almost equally marked symptom is the peculiar yellowish granular exudation in the retina, located by the ophthalmoscope around the posterior pole of the eye, and generally leaving the macula intact until late in the course of the disease. This exudation is shown by the microscope to be mainly in the nerve-fiber layer, though found in all the layers except that of the rods and cones. (8) The changes in the optic nerve-fibers seem to be generally intra-ocular, but have been traced occasionally for some distance back of the eyeball.

THE DOCTRINE OF THE INTERNAL SECRETORY ACTIVITY OF GLANDS IN RELATION TO THE PATHOLOGICAL ANATOMY OF SUNDRY MORBID CONDITIONS.[1]

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DIABETES, ADDISON'S AND GRAVES' DISEASE, MYXEDEMA, CRETINISM, AND ACROMEGALY.

MORBID anatomy alone can tell us singularly little concerning alterations in function. The existence of lesions recognizable to the naked eye or under the microscope may support conclusions reached by other means. It can do little more. We know from experiment that three-quarters of the liver, for example, may be removed from the healthy animal with no pronounced disturbance of the bodily functions; that whenever one-fifth or less of the pancreas is left in the dog it may be weeks before diabetes shows itself; that only when fifteen-sixteenths of the thyroid is removed may the dog succumb. In this enormous reserve of material and force may truly be said to lie the secret of the continued existence of living beings. Thus the mere fact that the greater part of an organ is found wanting by the anatomist, or replaced by tissue of another nature, is not in itself absolute evidence that what remains of the organ is functionless or incapable of meeting the needs of the organism.

Another matter which must be taken into account, one that until now has received scant attention, is the existence of vicarious activity. Because one organ is seriously diseased it does not follow that the organism as a whole exhibits disturbances commensurate with the lesions in that organ; other parts may vicariously fulfil its functions. We have the well-known example of total extirpation of so important an organ as the spleen being succeeded by continued good health. Here, presumably, the lymph-glandular tissue in general takes up the functions of the absent organ. There is the compensatory development of the parathyroids in athyrea, and further, the frequent, but not constant coexistence of atrophic disease of the thyroid and hypertrophy of the pituitary to which Boyce and Beadles have more especially called attention. Similarly and curiously we meet with frequent persistence or enlargement of the thymus when either the thyroid or the pituitary body is the seat of disease. In passing, I may suggest that vicarious activity affords a possible explanation of the not infrequent cases in which we have the eventual coexistence of more than one of the diseases under consideration. If, for example, the thyroid be the seat of atrophic disease the compensatory hypertrophy and over-action of the pituitary may lead to eventual affection of that organ.

Yet another consideration, seriously weighing upon the morbid anatomist, is that two opposite processes may produce a similar symptomatology; one that he can recognize, another that he cannot. If the glands afford an internal secretion entering the lymph and so eventually circulating through the system, we know that the ultimate use of the secretion must be to effect a chemical transformation of some substance in some other part or parts of the system. There are thus four possible conditions: (1) Production of an insufficient amount of internal secretion of any gland in consequence of disease of that gland, and (2) the assimilation or production of an excess of that substance which normally is acted upon and transformed by the internal secretion in question. In both cases there will be a heaping up of the substance in the system; in both cases there may be the same train of symptoms. In the one case the gland or glands may show the clearest signs of disease; in the other they may appear normal. The morbid anatomist may in time discover collateral disturbances distinguishing these two states; at present he cannot adequately. In one case of diabetes he finds the pancreas unaffected; in the next it is extensively diseased. Unaided by experimental pathology, he is quite incapable of determining the important *rôle* played by this organ in regulating the sugar supply of the organism and in the production of diabetes. Similarly there may be an accumulation of the in-

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internal secretion, either due to (3) hypertrophy of a gland, or (4) not associated with recognizable glandular change.

It would seem that we have to deal with:

CHANGES ASSOCIATED WITH SYMPTOMS OF DISEASE.

I. Relative glandular inadequacy. Excess of substance acted upon by the internal secretion of a gland, without due compensation.

1. Altered condition of gland leading to diminished activity and diminished internal secretion.

2. No disease or alteration of gland but excessive production or assimilation of the substance acted upon by the internal secretion.

II. Relative glandular over-activity. Excess of internal secretion.

1. Altered condition of gland leading to increased activity and increased pouring out of internal secretion.

2. No disease or alteration of gland, but diminished production or assimilation of the substance acted upon by the internal secretion of that gland.

CHANGES UNACCOMPANIED BY SYMPTOMS OF DISEASE.

III. Compensation. Lesions of gland or altered systemic condition unaccompanied by symptoms.

1. Altered condition of gland leading to (*a*) increase or (*b*) diminution of internal secretion, with due compensation.

2. (*a*) Increased or (*b*) diminished production after assimilation of substance acted upon by internal secretions, with due compensation.

Let me here emphasize the fact that I do not pretend that this table includes every possible condition leading to local or general disturbance of these glands affording an internal secretion, and leading to the symptoms most often associated with disease of these glands. For example, we know from experiments with phloridzin that glycosuria may, among other things, be the result, not so much of increased production of sugar as of increased removal of this body through the kidneys. Such cases are not embraced in this table. Again, what I may term compound cases, as, for instance, of glandular inadequacy, in part from disease, in part from increased production of the substance acted upon by the secretions, are presented only by implication. All I urge is, that this table, conforming with what experiment has shown may occur, may very possibly be utilized to explain the apparently contradictory revelations of the *post-mortem* room.

THE PANCREAS AND DIABETES.

Much more than a century has passed since attention was first called to the pronounced changes to be seen in the pancreas in some cases of diabetes. We all know that not until 1889, when Von Mering and Minkowski in Germany, and de Dominicis in Italy, published the results of their researches did the belief in the existence of a pancreatic diabetes begin to become generalized, but even at the present moment the fact that two cases, closely resembling each other clinically, may, *post-mortem*, show, the one, extensive pancreatic disturbance, the other, an apparently healthy pancreas, will create great confusion.

We have at least three careful studies upon this subject, those of Hansemann, Williamson, and Dieckhoff, and all demonstrating that three conditions may be distinguished: (1) extensive pancreatic disease with associated diabetes; (2) extensive pancreatic disease without diabetes; (3) diabetes unassociated with recognizable pancreatic disease. Hansemann, from a careful investigation of the records of the Pathological Institute and the Augusta Hospital at Berlin, found that the first condition (of pancreatic disease with diabetes) is more common than the two others combined. It may be that in Berlin the consumption of much beer predisposes to the pancreatic form of the disease; it may be that the material upon which Hansemann worked was imperfect to this extent, that full care was not taken to distinguish between extensive and extreme destruction of the pancreatic tissue; but it will, I think, be the experience here, as it was of Williamson in England, and Dieckhoff in Rostock, that advanced pancreatic disease, associated and unassociated with diabetes, are to be encountered the one but little more frequently than the other.

This much, however, stands out very prominently, that where in diabetes the pancreas is found affected, the morbid process within the gland is some one or other form of atrophy and destruction of the gland substance. Most commonly it is a form of periacinous fibrosis, originating, it would seem, secondarily to arteriosclerosis, in which, with thickening of the arterial walls, there is malnutrition of the gland cells, atrophy, and, what I have elsewhere termed, replacement fibrosis. Other forms of atrophy and fibrosis have not infrequently been observed—simple atrophy, congenital syphilitic fibrosis, obstruction of the ducts with calculi, dilation of the ducts and atrophy of the gland tissue, and scirrhous cancer of the pancreas; and I have found recorded five cases of necrosis, or hemorrhagic necrosis (two by Fitz and a third, a case under Drs. Bell and Finley, in my own experience at the Montreal General Hospital).

There can, therefore, be no question that the pancreatic lesions found in some cases of diabetes are such that there must be a marked diminution in the secretory activity of the gland. To this extent, in this one class of cases, the results of autopsies are clearly in accord with the results of experiments. We have here examples of relative glandular inadequacy, brought about by altered conditions of the pancreas leading to diminution of internal secretion.

Examples of diabetes unassociated with disease of the pancreas are so well known that I need but refer to them. While such are difficult to explain, from purely anatomic considerations, the fact that they are found, and found relatively frequently, is, in itself, an evidence that glycosuria is of at least a two-fold origin. That they are found is in conformity with the results of experiments—experiments which, on the whole, must be regarded as proving that there can be heaping up of sugar in the organism beyond the transforming power of the pancreatic internal secretion, or otherwise an incomplete burning up of the sugar. If this heaping up be in general due to increased glycogenesis, increased production of sugar, we should expect to find some evidence of increased activity of some glycogenetic organ; and here the recent researches of Glénard and Triboulet tend to show that this may be the case. Contrary to the older and generally accepted teaching, Glénard finds that, clinically, in over sixty per cent. of diabetics there is evidence of some hepatic enlargement. Anatomically, he finds that three conditions may be recognized, each possibly a stage in one morbid process, namely, hyperemia, general cellular hypertrophy (hyperplasia), and hypertrophy with cirrhosis (hypertrophic cirrhosis). Thus, while I will not say that anatomic considerations prove the existence of my second subgroup in this connection, I must point out that the existence of this class of cases of diabetes, without adequate recognizable pancreatic disturbance, is best explained on the supposition that there may be excessive production or assimilation of sugar, with accompanying relative pancreatic inadequacy.

There is yet a third group of cases to be considered—that of extensive atrophic disease of the pancreas without diabetes. Here we have to proceed cautiously in our reasoning. As I have already indicated, Sandmeyer has found that if only one-fifth to one-ninth of the organ be left in the dog, it may be months before sugar appears in appreciable quantities in the urine. Vaughan Harley gives an even smaller amount, namely, one-fifteenth; but evidently he refers not to the eventual development of diabetes, but to its onset within a few hours. We can thus state that so long as from one-ninth to one-fifteenth of the glandular tissue of the organ is functional, for so long glycosuria need not manifest itself in the dog. There is no valid reason why we should not apply these facts to the human being. Hence, so long as a very small proportion of fairly healthy gland tissue is left, we have a satisfactory explanation of why diabetes should not show itself, even though the major portion of the pancreas exhibits fibroid and atrophic or neoplastic changes. There are, however, aspects of the subject not capable of so simple an explanation. Again, Hansemann has called attention to cases of complete replacement of the normal pancreas by a diffuse cancerous infiltration. He seeks to explain these by the hypothesis that the cells of a primary new growth of a ductless gland may continue to furnish an internal secretion. This may or may not be the case. A more simple explanation of these and other examples of complete, or almost complete, destruction of the pancreatic glandular tissue is that of compensation, whether by vicarious function of Brunner's and other glands (the duodenal glands have frequently been found enlarged) or by diminished assimilation or production of sugar.

THE SUPRARENAL BODIES AND ADDISON'S DISEASE.

We meet with an identical series of cases in connection with another organ in which, experimentally, the existence of an internal secretion has been fully demonstrated. We may have (1) Addison's disease associated with disease of the suprarenal bodies; (2) Addison's disease with intact suprarenals; and (3) extensive, if not complete, destruction of the suprarenal bodies without the symptoms of Addison's disease.

Here, as with the pancreas in diabetes, the affection of the gland in Addison's disease is some form of atrophy or destruction of the specific gland tissue. Most frequently, I need scarcely say, the change is tuberculous and necrobiotic, resulting in the disappearance of the gland tissue, and its replacement by caseous material. But cases are on record of simple atrophy, hemorrhagic necrosis, and malignant growth of the bodies associated with or leading to all the symptoms of Addison's disease. In the vast majority of cases both glands are affected, but cases are on record (I have come across one such) where only one of the bodies has been the seat of recognizable disease. Of the three conditions above mentioned the most frequent found is the association of the disease with complete, or almost complete, destruction of the gland. So frequent is the association that the attempts to explain away the other two rare states of Addison's disease with intact suprarenal bodies and suprarenal disease without the Addisonian symptoms have been almost painful in their ingenuity. Yet undoubtedly well-authenticated cases are on record of both of these conditions.

We have in this connection singularly full statistical collections of cases. That of Lewin is well known; he collected accounts of 285 cases, of which 211 showed caseous lesions of the suprarenals (seventy-four per cent.). Gilman Thompson found an even greater proportion of either primary or secondary tuberculosis (eighty per cent.). In the remaining twenty per cent. there were either other forms of atrophic disease or absence of recognizable disturbance.

The existence of cases of Addison's disease without obvious disease of the suprarenals is generally acknowledged. Lewin found that as many as twelve per cent. of his cases were of this type. The explanation generally given is that in these there had been alterations in the neighboring semilunar ganglia and abdominal sympathetic. Certainly, disturbance of the nervous system, and especially of the sympathetic, does lead to pigmentation of the skin. We see this in cases of hysteria, and again in Graves' disease, in which, from whatever cause, we have most marked nervous changes; but I must confess that I feel some little impatience toward the upholders of this semilunar ganglion theory of Addison's disease, for scarce two of them describe the same order of lesions. Most of the changes described would appear to be quite common in the adult dying from other causes; thus Hale White found that, examining thirty-three semilunar ganglia removed indiscriminately, if we leave out of account three perfectly normal taken from young children, twenty-four, or eighty per cent., of the remainder exhibited more or less extensive degenerative changes, with frequent presence of granular masses of pigment.

Under the circumstances, therefore, I see no valid reason why cases in which the bodies are found apparently unaffected may not, in the light of our present knowledge, be most satisfactorily classed as possible examples of relative glandular inadequacy of the second order. This suggestion may to some appear revolutionary; but let me reiterate my main argument: We acknowledge that glands like the suprarenals produce an internal secretion; we must inevitably admit that the function of such secretion is to affect a chemic transformation of some substance or substances distributed in other parts of the body. We must admit that when, for example, the suprarenal bodies are diseased, or removed, some, at least, of the symptoms that follow are due to the absence of the internal secretion, or, in other words, are due to the accumulation in the system of the substance or substances acted upon by the internal secretion. The same symptoms must be produced whatever the cause of the accumulation of the substance or substances, whether by diminution of the internal secretion or by excessive production or assimilation of the aforesaid substance or substances. When, therefore, a morbid condition, such as diabetes or Addison's disease, which may be caused by destruction of a gland, is found to exist without recognizable disease of that gland, a very possible explanation of the condition is what I have termed relative glandular inadequacy due to excessive production or assimilation of the substance acted upon by the internal secretion. I would but ask you clearly to picture this: That in diabetes and Addison's disease it is not the internal secretion that causes the symptoms, but if experimental data are to be trusted, the lack of the same—and that this lack may be absolute or relative.

A few words only are necessary concerning affections of the suprarenal bodies without symptoms of Addison's disease. If bronzing be required as the one essential symptom, then cases of tuberculous disease of the suprarenal without "Addison's" are fairly frequent. Addison himself noted this condition. We must, however, it seems to me, acknowledge, with Chvostek and numerous earlier writers, that bronzing is but one of a group of symptoms, even though we are not prepared to accept Bedford Fenwick's suggestion that bronzing is especially connected with disease of the cortical layer. Leaving this category out of consideration, cases of extensive atrophic or neoplastic disturbance of both suprarenals without Addison's disease are few in number—far fewer than the cases of extensive pancreatic disease without diabetes; and in general the descriptions given are not sufficiently exact to be relied upon. Nevertheless, they exist. Greenhow apparently met with a case of almost complete atrophy without symptoms, and, in 1050 autopsies, upon subjects dying from diseases other than Addison's. Rolleston met with an example of caseation of the right and atrophy of the left suprarenal and with three cases (under the age of forty-five) in which both were peculiarly small. All these were without symptoms during life. There are more frequent examples recorded of cancerous growth destroying both bodies without noticeable symptoms. There is a possibility that the new growth here was so rapid and so recent that symptoms had not time to develop. In the atrophic and tuberculous cases it is not so easy to accept this explanation. Therefore, I am inclined to believe that compensation may occasionally manifest itself in man as it does occasionally in animals which have suffered complete ablation of both organs.

THE THYROID GLAND AND MYXEDEMA.

From an anatomic point of view there is little for me to say in elucidation of the pathology of myxedema beyond the one all-important statement that, with very rare exceptions, there is discoverable a well-marked atrophy of the thyroid. About this all pathologists are agreed. In the majority of cases the atrophy is peculiarly extensive, the specific cells of the gland being replaced by fibrous tissue; in some it is not so far advanced and areas may be found, not merely of degenerated remains of the vesicular epithelium, but of vesicles which by the superabundant proliferation of their epithelium would seem to be undergoing a compensatory hypertrophy. Yet where these are present they are localized and few in number; the main mass of the organ shows atrophy. A few cases only are on record, like that of Gulliver, where there has been a cancerous metamorphosis or replacement of the parenchyma. That in these cases the myxedema is associated with diminished internal secretion of the gland is, I need scarcely say, substantiated by the good effects of treatment by thyroid extract or thyroid feeding.

It must next be asked whether myxedema can show itself with apparently intact thyroid, *i. e.*, whether there are any cases which may possibly be explained by excess of the substance or substances acted upon by the internal secretion of the gland. The literature is peculiarly silent upon this point. I can find no example of autopsies upon cases diagnosed clinically as myxedema in which the gland was found normal, or but little affected. I can only recall an autopsy upon a patient of Dr. J. Stewart at the Royal Victoria Hospital, in which I found a large cancerous tumor of the pituitary. Here there had been a myxedematous swelling of the hands, and of other regions to less extent, without bony overgrowth, and no change was found in the thyroid. The condition, however, was not sufficiently advanced to deter Dr. Stewart from diagnosing tumor of the hypophysis. A somewhat parallel case (of apparent atrophy of the pituitary), in which the symptoms of myxedema were more marked, is recorded by Codd, but the anatomic details are given very briefly. Similarly we possess no exact records of atrophic disease of the glands unassociated with myxedema. I can only point out that it is not uncommon in the aged who show no signs that can properly be regarded as myxedematous—unless senility itself be regarded as such—to find a condition of very extensive chronic interstitial thyroiditis (as it may be termed) with arteriosclerosis, calcification, and hyalin changes, with retrograde or pseudo-embryonic type of vesicles. I have come across more than one case of this nature. There can be no doubt that here the secretory activity of the gland tissue must be very greatly reduced. If, however, we turn to cases in which by surgical means the equivalent of complete atrophy, namely, complete thyroidectomy, has been attained, we then possess abundant evidence that the thyroid proper may be absent without myxedema necessarily intervening, and almost as abundant evidence from the more recent researches that the absence of symptoms is connected with vicarious activity on the part of other organs, and especially of the parathyroids. These may be regarded either as true accessory thyroid tissue, or as distinct organs, according to the point of view of the individual. Certainly when the thyroid is functional they do not acquire the full characters of thyroid tissue, but similarly there are often within the healthy organ scattered areas of embryonal tissue. This can be said with precision: that they are independent masses of tissue, apparently most closely related to the thyroid, which are at times capable of development to, or toward, the adult type of the gland, and of assuming vicarious functions. In like manner the pituitary body can at times undergo very definite compensatory enlargement.

An interesting point in this connection, to which attention has been drawn by Rogowitsch, is that the rabbit, from which the thyroid can be removed with impunity, has a pituitary body relatively five times as large as that of the dog, in which ablation of the thyroid leads rapidly to symptoms of acute athyrea; or, more correctly, the relationship of thyroid to pituitary is 3 to 1 in the former, 15 to 1 in the latter animal.

On the whole, therefore, anatomic data in connection with myxedema and cachexia thyreopriva support and are capable of explanation by this doctrine that where glands afford an internal secretion, the development or non-development of symptoms of disease depends primarily upon the relative amount of internal secretion produced and of the substance or substances acted upon by the same.

CRETINISM.

Cretinism presents a far more complicated histologic picture—so complicated that Bircher argues with very considerable force that "cretinic degeneration, as also dwarfism and chondrodystrophia fetalis hypoplastica have no etiologic connection with the functions of the thyroid." Bircher, however, fails to recognize that if we accept the existence of an internal secretion, we must also admit the presence of substances upon which it acts, and he cannot see that widely contrasted anatomic conditions may lead to the same train of symptoms. We must, I think, abide by the experimental and clinical evidence that removal of the thyroid in the young leads to a condition undistinguishable from cretinism. This being so, we find that in some few cases of typical cretinism the thyroid is completely absent, in a large number it is small, in a yet larger number, according to Von Eiselberg and Kocher, there is a goitrous condition present, while, according to Bircher, the goiters may be of all possible forms, from simple hyperplastic through soft (parenchymatous) and cystic to fibroid. The only point clearly to be made out from Bircher's very destructive criticism is that while in several cases the thyroid has been found of normal size, apparently no case exists in which by microscopic observation it has been found of normal structure.

EXOPHTHALMIC GOITER.

I will now briefly refer to the condition which presents a series of symptoms so remarkably contrasted with myxedema—which also anatomically presents an equal contrast. There is to be found in exophthalmic goiter, as Greenfield has shown, and as is now generally accepted, a characteristic hyperplasia of the thyroid parenchyma, complicated, it may be, in later stages, by increased fibrosis. The one question of immediate concern here, is whether from this we can safely deduce that there is accompanying increased internal secretion. As I have already hinted, I do not think that from anatomic considerations alone we can safely make this deduction. There is, however, an important fact in favor of such deductions, namely, the strong likeness between the primary glandular changes in Graves' disease and those described by Halsted and others as occurring in the compensatory hyperplasia of the thyroid after removal of large portions of the gland; and if, together with the anatomic changes, we consider the favorable effects which so often follow removal, destruction, or diminution in the blood supply of portions of the hypertrophied gland in this disease—of operations which must lessen the internal secretion—it is difficult to arrive at any other conclusion than that in exophthalmic goiter there is increased internal secretion, and that this plays a singularly important part in the development of the symptoms. Whether this be primary or secondary to lesions of the central nervous system—of the restiform bodies, for example, our present anatomic data are insufficient to decide—as again they are incapable of deciding whether the increased secretion is altered or unaltered in quality. I may here note that, as Joffroy and Achard have indicated, the symptoms of parenchymatous and adenomatous goiter are at times curiously allied to those of exophthalmic goiter. Indeed, together with Vanderweld and Le Bœuf, they hold, I think, without due cause, that there is nothing anatomic to distinguish the one condition from the other. That the one condition may lead to the other is a matter of clinical experience. As Dr. Shepherd has pointed out to me, extirpation of the goitrous nodules or cysts leads to the almost immediate amelioration of the symptoms.

The development of exophthalmic goiter without hyperplastic alteration of the thyroid is a matter concerning which there is little anatomic evidence. I find one case recorded by Joffroy and Achard in which the gland was of normal size and, while not normal histologically, presenting nevertheless a series of changes wholly distinct from Greenfield's classic description. The vesicles, instead of being small and corrugated, were enormously distended; instead of absence, there was abundance of colloid material; in place of a columnar and proliferating epithelium, the lining cells were flattened. Not a few believe in the existence of Graves' disease without goiter. Among recent writers Buschan especially holds this view, but, save in the above case, I cannot find anatomic substantiation for the opinion. Clinically, Graves' disease without enlarged thyroid has very frequently been noted; in some cases enlargement supervenes, in others it does not, but there may well be increased activity of the gland without marked enlargement. All that can be said at present from this evidence is that apparently the condition does occur. So also evidence as to the occurrence of marked hyperplasia and presumably increased secretion without symptoms is not so full and precise as could be wished. I can only point out that if adenomatous nodules in the thyroid produce any internal secretion then, while many cases of adenomatous goiter show a train of symptoms somewhat allied to exophthalmic goiter, and while a few cases pass on to undoubted Graves' disease, many, on the contrary, appear to last for years without symptoms. And in autopsies upon those dying from diseases other than exophthalmic goiter, we find a wide variation in the condition of the thyroid, from atrophy on the one hand to a condition not far removed from what Greenfield and others describe in association with exophthalmic goiter.

THE PITUITARY BODY AND ACROMEGALY.

Finally, some few words must be said concerning that strange collection of symptoms and anatomic changes to which Marie has given the name of acromegaly. Yearly it has become more clearly recognized that the term indicates a definite disease, although there is a liability toward confusion with gigantism on the one hand, and on the other with the remarkable overgrowth of bone in certain cases of chronic disease (mainly of the lung) which again Marie was the first to group together under the title

—voluminous, and in other respects unsatisfactory—of hypertrophic pulmonary osteoarthropathy.

Here again the remarkable trio of conditions forces itself upon our notice; there may be acromegaly with disease of the pituitary, acromegaly with apparently unaffected pituitary and extensive disease of the pituitary without acromegaly. Where there is acromegaly, in by far the greater number of cases the glandular portion of the body is diseased. It is true that the condition is rare. Between 1890 and the present time less than thirty affected subjects have undergone *post-mortem* examinations. Out of 24 necropsies upon cases stated to be acromegaly, Tamburini, the latest collector, finds that in 17 (or over 70 per cent.) the pituitary has been found diseased. The remaining 7 are subjected by Tamburini to severe criticism, with the result that he rejects 2 on the ground that the condition had only been recognized clinically for a few months, and no microscopic examination had been made. He presumes that the time had not been sufficient for the development of naked eye changes. Three other cases he holds to have been osteoarthropathy. There remain two which he could not definitely reject and consequently classified as doubtful. So far as I can follow Tamburini, he is strongly of the opinion that morbid changes in the hypophysis cerebri are essential to acromegaly. The majority of observers do not accept this extreme view, and with them I am inclined to believe that here, as certainly obtains in diabetes and Addison's disease, there may be typical symptoms without recognizable involvement of the pituitary.

But granting this much, that in the majority of instances the gland is diseased, it is difficult to advance much further, for there is a curious discord concerning the exact nature of the alterations in the pituitary body. In about one-half of the cases, hypertrophy of the organ is described. Stroebe, Tamburini, Boltz, and others of later date conclude that the change is adenomatous; Marino, Dallemagne, and Gauthier describe a peculiar cystic degeneration, and Boyce and Beadles a cystadenoma, while in another of Dallemagne's cases and in Wolf's there was clearly sarcoma, and in Bury's a "glioma." What are we to conclude? Is acromegaly accompanied by an increased pouring out of internal secretion, or the reverse? Mere hypertrophy and possibly adenomatous overgrowth might lead to increase, but surely degenerative changes and sarcoma can have no such effect.

It is difficult to reason by analogy, and if we attempt this and seek to base any argument upon what occurs in disease of the gland, which anatomically is most closely related to the pituitary—namely, the thyroid—we are led rather to the conclusion that acromegaly must be due to arrest of function of the former. That is to say, there is a certain correspondence between the changes occurring in the connective tissues, in myxedema, and those affecting the bone, and to some extent the subcutaneous connective tissues in acromegaly.

On the other hand, the pituitary is nearly always found enlarged and hypertrophied in general gigantism, as distinguished from this localized acromegalic gigantism. It is difficult to reconcile such general gigantism with diminished activity on the part of the enlarged hypophysis, while again the contrast may be pointed out between gigantism and cretinic dwarfism. Tamburini, and independently Massolongo, have attempted to coordinate the contradictory anatomic discoveries by suggesting that two stages of the disease may be recognized, a first in which the hypophysis undergoes hypertrophy, and is in overaction, which may give place to a second in which the hypertrophied tissue either undergoes atrophy or adenomatous or sarcomatous change. The suggestion is seductive, but for the present must be regarded merely as a suggestion.

Briefly, therefore, our knowledge in this connection is miserably inadequate, and experiments have so far been without result. We cannot say whether in acromegaly there is increased or diminished internal secretion. While the change in the pituitary appears often to be primary, we cannot with certainty lay down that this is the case. It has only to be added that if we admit that lesions of the pituitary are associated with acromegaly, we must also admit that compensation can occur, for there is considerably over a score of cases on record of hypertrophy, adenoma and cystadenoma of the organ, all of considerable size and presumably of long duration, which had developed without signs of the disease in question.

CLASSIFICATION OF ACUTE PERITONITIS.[1]

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Acute inflammation of the peritoneum is produced by so many different causes and assumes such varied clinical aspects that it is extremely difficult to formulate a satisfactory classification of the condition. A discussion of its etiology, differential diagnosis, prognosis, and treatment, except upon the basis of a clear and comprehensive classification, is fruitless and misleading, and usually results in the deduction of erroneous and often dangerous conclusions. The classification should include the anatomy, pathology, and etiology of the disease to be of value in rendering a correct diagnosis and a reliable prognosis, and to enable the physician and surgeon to advise and apply effective therapeutic measures.

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I. ANATOMIC CLASSIFICATION.

An accurate anatomic diagnosis is necessary for the purpose of locating the inflammatory process correctly or to trace the connection between it and the organ primarily the seat of infection. During the beginning of the attack and in cases of localized peritonitis, the inflammation can usually be located without much difficulty, while the reverse is often the case after the disease has become diffuse. The inflammation may commence and spread from either surface of the serous membrane, visceral and parietal.

a. Ectoperitonitis.—An inflammation of the attached side of the peritoneum is called ectoperitonitis. As compared with inflammation of the serous surface, this inflammation of the subendothelial vascular connective tissue is characterized clinically and pathologically by intrinsic tendencies to limitation of the inflammatory process. In infected wounds of any part of the abdominal wall in which the peritoneum is exposed but not perforated, the primary ectoperitonitis is occasionally followed by the extension of the infection to the serous surface through the lymphatics, or by the direct extention of the infective process through the tissues until it reaches the endothelial lining. Peritonitis of a visceral origin is always preceded by ectoperitonitis, whether the infection reaches the peritoneal cavity through a perforation or by aggressive extension of the infection from a primary focus through the tissues until it reaches the free peritoneal surface.

b. Endoperitonitis.—What is usually spoken of and described as peritonitis is an inflammation of the serous surface of the peritoneum, which, anatomically speaking, is an endoperitonitis.

c. Parietal Peritonitis.—Inflammation of the serous lining of the peritoneal cavity is called parietal peritonitis. It may occur as a primary affection in penetrating wounds of the abdomen, but more frequently is met with as a secondary disease in consequence of the extension of an infection from one of the abdominal or pelvic viscera, or perforation into the peritoneal cavity of a visceral ulcer or a subserous or visceral abscess.

d. Visceral Peritonitis.—Inflammation of the peritoneal investment of any of the abdominal or pelvic organs is known as visceral peritonitis. The inflammatory process is seldom limited to a single organ, as during the course of the disease adjacent organs or the parietal peritoneum will surely become involved. In diffuse peritonitis the whole peritoneal sac and the serous covering of all the abdominal organs is affected. The nomenclature of visceral peritonitis is a lengthy one, as it includes all of the abdominal and pelvic organs from which, when the seat of a suppurative inflammation, may become the primary starting point of an attack of localized or diffuse peritonitis.

e. Pelvic Peritonitis.—Inflammation limited to the peritoneal lining of the pelvis and its contents is known clinically and anatomically as pelvic peritonitis. It is an affection almost entirely limited to the female sex, and in the majority of cases is caused by extension of gonorrheal infection from the Fallopian tubes, or a mild form of pyogenic infection from the uterus, its adnexa, or the connective tissue of the parametrium.

f. Diaphragmatic Peritonitis.—Inflammation of the under surface of the diaphragm is described as diaphragmatic peritonitis, and when it assumes a suppurative type and remains limited, leads to the formation of a subdiaphragmatic abscess. This acute localized form of peritonitis is usually secondary to suppurative affections of the liver and gall-bladder, and perforating ulcers of the stomach and duodenum.

2. ETIOLOGIC CLASSIFICATION.

The classification of peritonitis upon an etiologic basis is of the greatest importance and practical value. The nature of the exciting cause frequently determines the anatomic and pathologic varieties. It likewise has a strong bearing upon the prognosis, and often furnishes positive indications as to the methods of treatment which should be adopted. Peritonitis, like every other inflammatory affection, is always the result of infection with pathogenic microbes, usually of the pyogenic variety. The etiology must consider the different avenues through which the microbes find their way into the peritoneal cavity.

a. Traumatic Peritonitis.—Primary peritonitis has usually a traumatic origin; that is, the injury establishes a communication between the peritoneal cavity and the surface of the body or some of the hollow abdominal or pelvic organs, through which pyogenic bacteria enter in sufficient quantity and adequate virulence to cause an acute inflammation.

b. Idiopathic Peritonitis.—The occurrence of peritonitis without an antecedent injury or suppurative lesion is doubted by many. It is too early to deny *in toto* the existence of so-called idiopathic peritonitis, but future bacteriologic examinations of the inflammatory product will no doubt reveal a microbic cause in all such cases. As an isolated affection, peritonitis is found most frequently in females during or soon after menstruation. It is probable that the pyogenic bacteria multiply in the blood which accumulates in the uterus and reach the peritoneal cavity through the Fallopian tubes. It is said to have occurred in consequence of exposure to cold, and is then known as rheumatic peritonitis. Occasionally it has been observed as one of the remote manifestations of Bright's disease, pyemia, and the acute eruptive fevers.

c. Perforative Peritonitis.—Perforation of an ulcer of any part of the gastro-intestinal canal, or of an abscess of any of the abdominal or pelvic organs, or of the abdominal wall into the peritoneal cavity, is by far the most frequent cause of acute peritonitis. Two important and frequent causes are appendicitis and suppurative salpingitis.

d. Metastatic Peritonitis.—This form of peritonitis occurs, like other metastatic affections, in connection with suppurative or infectious processes not connected with the peritoneum. In very rare cases it develops in the course of many of the acute infectious diseases, as scarlatina, smallpox, erysipelas, rubeola, and even varicella. It also occurs frequently in the course of septicemia and pyemia.

e. Puerperal Peritonitis.—Peritonitis occurring in connection with septic diseases of the puerperal uterus has for a long time been known as puerperal peritonitis. The infection may extend from the endometrium through the Fallopian tubes, or it may follow the lymph channels or the thrombosed infected uterine veins. Infection through the lymphatics usually results in rapidly fatal diffuse septic peritonitis, while in thrombophlebitis there is a greater tendency to localization, unless the thrombi disintegrate and cause embolism and pyemia.

3. PATHOLOGIC CLASSIFICATION.

The pathologic conditions which characterize the different varieties of peritonitis necessarily must be considered in classifying this disease. The pathologic classification is based almost entirely upon the gross and microscopic appearances of the inflammatory exudation and transudation.

a. Diffuse Septic Peritonitis.—Every acute peritonitis is septic in so far that phlogistic substances reach the general circulation from the inflammatory lesion, and in that frequently the inflammation terminates in suppuration; but the term "septic peritonitis" should be limited to those cases of diffuse septic peritonitis in which, as a rule, death occurs in a few days, and before any gross pathologic conditions have had time to form. It is a disease that is almost uniformly fatal, with or without operative treatment, the patients dying from the effects of progressive sepsis. The claim of operators to have cured such cases by laparotomy must be accepted with a good deal of allowance. The microbes which produce this form of peritonitis are those which follow the lymph spaces and are rapidly diffused not only over the entire peritoneal surface, parietal and visceral, but also through the subserous lymphatic channels. The disease is observed most frequently after perforation into the free peritoneal cavity of an abscess containing septic pus; rupture, or perforation of any of the abdominal or pelvic viscera containing septic material; gunshot or stab wounds of the abdomen with visceral injury of the gastro-intestinal canal; and occasionally as the result of infection during a laparotomy. The gravest form of puerperal fever is a diffuse septic peritonitis. The subjects of this variety of peritonitis die so soon after the beginning of the disease that at the autopsy no gross tissue changes are discovered. Besides a slightly increased vascularity, nothing is found to indicate the existence of peritonitis. The septic material, formed in large quantities and of great virulence, is rapidly absorbed by the stomata of the under surface of the diaphragm discovered and described by Von Recklinghausen.

b. Suppurative Peritonitis.—Suppurative peritonitis, that is, an inflammation of the peritoneum which results in the formation of pus, is always more or less circumscribed. This form of peritonitis is the most frequent, and is generally associated with more or less fibrinoplastic exudation. The pus is either serous or seropurulent, or may reach the consistence of cream, when it usually is of a yellow color. The accumulation of pus may be so large that upon opening the abdominal cavity it may appear as though the entire peritoneal cavity and all the organs contained within are implicated, but a careful examination will almost always reveal the fact that a large part of the peritoneal cavity and many of the organs were shut out from the inflammatory process by plastic adhesions. Suppurative peritonitis must therefore be regarded from a practical standpoint as a circumscribed inflammation. The appearance and character of the pus are often greatly modified by the admixture of an extravasation accompanying the perforative lesion which produced the peritonitis. If the pus is thin (serous) we speak of *seropurulent peritonitis.* It is a serous peritonitis with the formation of pus in sufficient quantity to render the serum more or less turbid. This subvariety of suppurative peritonitis is without exception in combination with fibrinous exudations, which tend to limit the extension of the infective process. Sedimentation of the solid constituents takes place, so that the fluid contains more of the solid constituents in the most dependent portion of the affected district.

c. Serous Peritonitis.—Independently of malignant and tubercular disease of the peritoneum, circumscribed hydrops of the peritoneal cavity is caused by a very mild form of peritonitis, the pus microbes present not being sufficient in quantity to produce pus. Patients usually recover rapidly from this form of peritonitis. The slight alterations of the peritoneum produced by the inflammatory process do not interfere with the transudation of serum, and resorption is effected as soon as the inflammation subsides and the normal absorptive function of the peritoneum is restored. Serous peritonitis is usually more or less complicated by fibrinous peritonitis, as fragments of fibrin are often found suspended in the blood. The serum is generally somewhat turbid, not transparent, and grayish-yellow or reddish in color. As long as the fluid is limited in quantity, it gravitates toward the most dependent parts of the abdominal cavity, in the small pelvis; when more copious, it reaches the upper portions of the peritoneal cavity and first seeks the depression on each side of the spinal column.

d. Fibrinoplastic Peritonitis.—The inflammation results in a plastic exudation with little or no effusion. The character of the exudate depends on the intensity and quality of the bacterial cause. The exudation is often so copious that it has been mistaken for malignant disease. The symptoms are marked cachexia, ascites, uncontrollable diarrhea, and apparent tumor deep in the abdomen. The exudation in the course of time contracts, and results in strong bands of adhesion, which frequently flex and distort the organs to which they are attached, which has given rise to another term—*peritonitis deformans.*

4. BACTERIOLOGIC CLASSIFICATION.

As the essential cause of peritonitis is always the presence and action of pathogenic microbes and their toxins upon the peritoneum, and as the character of the inflammatory process is largely influenced by the kind of microbes which produced the infection, a bacteriologic classification is of the greatest scientific and practical importance. All pus microbes present in sufficient quantity and virulence in the peritoneal cavity can produce peritonitis.

a. Streptococcus Infection.—The streptococcus pyogenes is the microbe which is most frequently found in the tissues in cases of septic peritonitis. The infection spreads so rapidly over the peritoneal surface and through the subserous lymphatics that death, as a rule, occurs from septic intoxication before a sufficient length of time has elapsed for any gross pathologic lesions to form. Absence of fibrinous exudate and effusion are the most striking negative findings at operations and necropsies. Streptococcus infection is the immediate cause of the most fatal form of puerperal peritonitis. After the peritoneum has once been infected, rapid diffusion takes place, and finally the diaphragm and pleuræ are implicated in the same process, and the patient dies from the effects of progressive sepsis.

b. Staphylococcus Infection.—In peritonitis caused by staphylococcus infection the intrinsic tendency to localization of the disease is more marked; the inflammation results more often in circumscribed suppuration and limitation of the infective process by copious fibrinoplastic exudations. As a rule, the inflammation terminates in the formation of thick, cream-colored pus. Different forms of staphylococci are often seen in the same inflammatory product.

c. Pneumococcus Infection.—It is now well known that pneumonia is produced by different microbes, but the diplococcus is found in about eighty per cent. of all cases. It is this microbe which occasionally is found as the bacteriologic cause of acute suppurative peritonitis. Weichselbaum has found the diplococcus of pneumonia unaccompanied by any other micro-organism in three cases of peritonitis. In one case the peritonitis and acute pneumonia occurred simultaneously; in the other, double pleuritis followed the peritonitis, but in the last case the peritonitis was undoubtedly primary, and in the absence of any other microbes in the inflammatory product must have been caused solely by the diplococcus of pneumonia.

d. Bacillus Coli Commune Infection.—The bacillus coli commune, a microbe that constantly infests the intestinal canal, is in a fair percentage of cases the bacteriologic cause of acute peritonitis. This microbe possesses pyogenic properties, and in intestinal paresis and perforations escapes into the peritoneal cavity, and usually produces a pathologically mixed form of peritonitis—that is, suppurative and fibrinoplastic peritonitis.

e. Gonococcus Infection.—In the peritoneal cavity the gonococcus produces a plastic peritonitis, and sometimes localized suppuration. Salpingoperitonitis and the more diffuse pelvic peritonitis is most frequently caused by gonococcus infection.

f. Tubercular Infection.—The rapid diffusion of the tubercle bacillus in the peritoneal cavity, either through the circulation or by rupture of a tubercular abscess into the peritoneal cavity, or by extension from a tubercular salpingitis, occasionally gives rise to a form of acute peritonitis characterized as such in a modified way by the clinical manifestations which accompany it. According to the intensity of the infection, or the degree of susceptibility of the patient to the action of the tubercle bacillus, the disease assumes one of the following pathologic forms: (1)

Tubercular ascites. (2) Fibrinoplastic peritonitis. (3) Adhesive peritonitis. Suppuration takes place only when the tubercular product becomes the seat of a secondary mixed infection with pus microbes.

5. CLINICAL CLASSIFICATION.

A diagnosis for the careful physician and conscientious surgeon must include the location, extent, causation, and pathology of the disease. From the information obtained from the classification already made must be obtained the material upon which to base a clinical classification. Such a classification should serve as a guide in differentiating between the cases which demand surgical intervention and the cases which can be trusted to medical treatment.

a. Ectoperitonitis.—Abscess formation in the subperitoneal connective tissue, as seen most frequently in the pelvis in women, in the cavity of Retzius in men, and in the retroperitoneal space in both sexes, is always attended by inflammation of the under surface of the peritoneum. Such abscesses should be recognized and accurately located sufficiently early to prevent serious complications by an extraperitoneal incision and drainage; or, if the abscess is of a tubercular nature, by tapping, evacuation, and iodoformization.

b. Diffuse Septic Peritonitis.—This form of peritonitis is characterized clinically by the gravity of the general symptoms from the very incipiency of the disease; pathologically, by the rapid diffusion of the infection over the entire serious surfaces, visceral and parietal; and, bacteriologically, by the presence in most of the cases of the streptococcus pyogenes in the inflamed tissues. Staphylococci, pneumococci, and the colon bacillus may also be the cause of rapidly spreading diffuse peritonitis. This form of peritonitis usually follows penetrating wounds of the abdominal cavity, complicated by visceral injuries of the gastro-intestinal canal, contusion or laceration of any of the abdominal or pelvic organs, rupture of an abscess or ulcer into the free peritoneal cavity, or the extension of a septic lymphangitis from any of the abdominal or pelvic organs to the peritoneum. Strict aseptic precautions have succeeded in greatly reducing, but not entirely eliminating, the danger from this source in all operations requiring opening of the free peritoneal cavity. In genuine cases of diffuse septic peritonitis surgical intervention is usually powerless in preventing speedy death from toxemia.

c. Perforative Peritonitis.—Perforative peritonitis is manifested by the sudden onset of the disease, by diffuse pain and tenderness, rigid abdominal walls, fever, and vomiting, and by the impossibility by inspection, palpation, or auscultation to ascertain intestinal peristalsis, the latter being almost positive proof of the presence of gas in the free peritoneal cavity. According to the author's observations, meteorismus peritonei in perforative peritonitis caused by affections of the appendix is rare, while he has seldom found it absent in perforations of any other portion of the gastro-intestinal canal. According to the number and virulence of the microbes which find their way into the peritoneal cavity with the extravasation, the resulting peritonitis is either diffuse or more or less circumscribed. The colon bacillus is invariably present in the inflammatory product, but, in addition, streptococci, staphylococci, putrefactive bacilli, the typhoid bacillus, or bacillus of tuberculosis, according to the nature of the primary affection, may also be found.

Perforative peritonitis must be regarded and treated as a strictly surgical disease. The primary lesion must be exposed and treated as soon as a diagnosis can be made, and the necessary measures applied to limit the extension of the infection and to prevent death from toxemia.

d. Circumscribed Peritonitis.—The symptoms appear suddenly, *i. e.*, are preceded by those incident to the primary disease. The severity of the pain and the extent of the muscular rigidity and tenderness will correspond with the extent of the disease. The intensity of the general symptoms are determined more by the nature and virulence of the microbic cause than by the size of the peritoneal surface involved. The inflammatory focus may be limited to a very small space, or it may involve the greater portion of the peritoneal cavity and organs which it contains. Circumscribed suppurative peritonitis is usually the result of infection with staphylococci, bacillus coli commune, and pneumococci. In fibrinoplastic peritonitis surgical interference becomes necessary only when intestinal obstruction is caused by the adhesions. In circumscribed suppurative peritonitis the pus should be evacuated as soon as the disease is recognized, and, if possible, by an extraperitoneal route.

ADDRESS ON THE UNVEILING OF THE BRONZE STATUE OF THE LATE PROFESSOR SAMUEL DAVID GROSS IN WASHINGTON, D. C.[1]

By WILLIAM W. KEEN, M.D.,
OF PHILDELPHIA;
PROFESSOR OF THE PRINCIPLES OF SURGERY AND OF CLINICAL SURGERY IN THE JEFFERSON MEDICAL COLLEGE.

SAMUEL DAVID GROSS was born near Easton, Pa., July 8, 1805, and died in Philadelphia, May 6, 1884, having nearly completed his seventy-ninth year. His early years were spent amid the rustic labors and healthful pleasures of a Pennsylvania farm. This gave him a strong and vigorous body, without which he never could have performed a tithe of the labor which preeminently distinguished his long life. Before he was six years old he determined to be a surgeon, and early in his professional studies to be a teacher. Yet when he was fifteen he knew scarcely any English. Brought up among the sturdy, honest, laborous Pennsylvania Dutch, he could speak that curious English-German. But his English, of which he became so fluent a master, and even pure German, which he began to study at the same time, were learned almost as foreign tongues, and as a result of his appreciation at that early age of his need for a better and wider education.

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[1] Abstract from the address delivered before the Fourth Triennial Congress of American Physicians and Surgeons, Washington, D. C., May 5, 1897.

At seventeen he began the study of medicine as the private pupil of a country practitioner, but after learning some osteology with the aid of that tuppenny little compend, Fyfe's Anatomy, and a skeleton, he gave up in despair, for again he found his intellectual tools unequal to his work. Accordingly he stopped at once in his medical career and went to the academy at Wilkesbarre. At nineteen he began the study of medicine again—a study in which for sixty years his labors never for a moment ceased or even relaxed.

In 1828, at the age of twenty-three, he took his degree in the third class which graduated from the Jefferson Medical College. He opened an office first in Philadelphia, but soon removed to Easton. Nothing is more characteristic of the man than that, while waiting for practice, he spent hours daily in dissecting in a building he erected at the back of his garden, and provided himself with a subject by driving in a buggy all the way from Easton to Philadelphia and back; wrote a work on descriptive anatomy, which, however, he never published, and in eighteen months after graduation had translated and published Bayle and Hollard's "General Anatomy," Hatin's "Obstetrics," Hildebrand, on "Typhus," and Tavernier's "Operative Surgery"—works aggregating over eleven hundred pages. His motto was indeed "*Nulla dies sine linea.*" His "stimulus," he himself says, "was his ambition and his poverty."

In 1833, five years after his graduation, he entered upon his career as a teacher—a career which continued for forty-nine years, till within two years of his death. This took him first to Cincinnati as Demonstrator of Anatomy in the Medical College of Ohio. In 1835 he became Professor of Pathological Anatomy in the Cincinnati Medical College.

His book on the "Bones and Joints" had appeared in 1830, and next, as the result of four-years' study and teaching, his "Elements of Pathological Anatomy" was published in 1839. In 1840 he went to the University of Louisville as Professor of Surgery, and, excepting one year when he was Professor of Surgery in the University of the City of New York, he remained there for sixteen years, happy in his family, his students, his flowers, and his generous hospitality. He and his colleagues—Drake and Austin Flint—soon made it the most important medical center in the West, and he was in surgery the reigning sovereign. While there he published, in 1851, his work on the "Urinary Organs," and in 1854 another pioneer work, that on "Foreign Bodies in the Air Passages." His fame had become so great that he was invited to the University of Virginia, the University of Louisiana, the University of Pennsylvania, and other schools. But he was steadfast to Louisville until his beloved *alma mater* called him to the chair just vacated by Mütter. From 1856, when in his introductory he said, "whatever of life and of health and of strength remain to me, I hereby, in the presence of Almighty God and of this large assemblage, dedicate to the cause of my *alma mater*, to the interest of medical science, and to the good of my fellow-creatures," till he resigned his chair in 1882—nay, till his death in 1884—this was absolutely true. Even when the shadows of death were thickening he corrected the proof sheets of two papers on "Wounds of the Intestines" and "Lacerations Consequent upon Parturition," his last labors in the service of science and humanity.

Three years after he entered upon his duties at the Jefferson he published his splendid "System of Surgery"—a work which, though in many respects its pathology and its practice are now obsolete, is a mine of information, a monument of untiring labor, a text-book worthy of its author, and has been the companion and guide of many generations of students. From his removal to Philadelphia till his death, twenty-eight years later, his life can be summed up in a few sentences: daily labor in his profession, editorial labor without cessation for some years in managing the *North American Medico-Chirurgical Review*, the successor of the Louisville *Medical Review*, of which he had also been the editor; article after article in journals; address after address; twenty-six annual courses of lectures on surgery to thousands of students; labors without ceasing till he wrapped the drapery of his couch around him and calmly passed away.

In reviewing his life we may fittingly consider it from the standpoint of the surgeon, the author, the teacher, and the man.

As a surgeon he was painstaking, thorough, and careful in his investigation of a case, skilful as an operator, and, having so vast an experience and equally extensive acquaintance with the wide literature of his profession, he was scarcely perplexed by the most difficult case, and rarely at a loss as to the proper course to pursue in the most unexpected emergencies. He was a practitioner of the old school, who always mingled medicine with surgery, and attributed much of his success in the latter to his experience in the former. His influence on the profession was marked and wholesome. He founded two medical journals, was the founder of the Pathological Society of Philadelphia and of the Philadelphia Academy of Surgery, the founder and first president of the American Surgical Association, and the first president of the Alumni Association of the Jefferson Medical College. It is peculiarly fitting, therefore, that these last two associations should unite to-day in erecting and unveiling the bronze statue of one who did so much for them and whom they rightly delight to honor.

As an author, his chief characteristics were untiring industry, comprehensiveness, methodical treatment of his subject, and a singular felicity of style, especially for one who acquired English so late and with difficulty. He "blazed" more than one new "trail" in the forests of surgical ignorance. In the early part, and even in the middle of this century, it was rare for an American to write a medical book. The most they did was either to translate a French or a German work, or to annotate an English one. He was one of the earliest to create an American medical literature of importance, and his works on the "Urinary Organs," on "Foreign Bodies in the Air Passages," and his text-book on "Surgery," gave a position to American surgery abroad which we can now hardly appreciate; while his "Pathological Anatomy" was the very first work in the English language on that most important branch of medicine. His experiments and monograph on "Wounds of the Intestines" laid the foundation for the later studies of Parkes, Senn, and other American surgeons, and have led to the modern rational and successful treatment of these then so uniformily fatal injuries. He first advocated abdominal section in rupture of the bladder, the use of adhesive plaster in fractures of the legs, amputation in senile gangrene, and the immediate uniting of tendon to tendon when they were divided in an incised wound. Had he lived but a year or two longer bacteriology would have shown him that scrofula was of tubercular origin, and not, as he so firmly believed and vigorously taught, a manifestation of hereditary syphilis.

That his eminence as an author should have met with recognition from scientific organizations and institutions of learning is no cause of surprise. It made him the president of the International Medical Congress of 1876, a member of many of the scientific societies of Europe as well as America, and won for him the LL.D. of the University of Pennsylvania, and I believe the unique honor in America of having had conferred upon him the highest degree of all three of the leading universities of Great Britain—Oxford, Cambridge, and Edinburgh.

As a teacher he was earnestness itself. Filled to overflowing with his subject, his one desire was to impart to us as much of the knowledge he possessed as our young heads could hold. Repetition did not blunt the novelty nor time the attraction of his theme. His whole heart was in his work. Especially did he inculcate the principles of surgery, for he was convinced, and rightly, that one who was thoroughly imbued with these could not go far wrong in his practice. As a man, he was beautiful in his relations to his family, who were devoted to him with an affection that was unusually strong; upright in all his dealings, and despising cant and pretense and anything unworthy a true gentleman. Few men were more widely known in and out of the profession, and few ever had the good fortune to know intimately so many distinguished people of both continents. Wherever he was known he was respected, and by those who knew him intimately he was beloved.

Such, then, was the man whom we are gathered to-day to honor. The American Surgical Association, the Alumni Association of the Jefferson Medical College, and a few friends who have gladly united with us in this service of affectionate remembrance, have presented his statue to the people of the United States, to stand forever in our beautiful capital city as a mute yet eloquent evidence of our esteem for his personal worth and his professional attainments.

Yonder statue of Joseph Henry has stood alone for too many years. We have to-day unveiled its worthy companion. Both of them are memorials of men great in science, whose lives were devoted to the good of their fellow-creatures, to saving life, adding to human comfort, lessening pain, promoting knowledge, cheering the sick, and assuaging even the very pangs of the dying. We do well thus to honor in imperishable bronze the men who have won these victories of peace! To no one can the words of the blessed Master apply with greater force than to the kind surgeon whose time and thought and talents are given to humanity, and, above all, to the poor, with no payment but the grateful look of returning health and rescued life and that inward satisfaction which far surpasses all the wealth of the Orient—"Inasmuch as ye have done it unto one of the least of these, my brethern, ye have done it unto Me."

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SATURDAY, MAY 8, 1897.

THE MEDICAL CONGRESS AT WASHINGTON.

ELEVEN years have elapsed since the American Surgical Association first advocated the organization of a general congress of American physicians and surgeons that should assemble at certain stated intervals. The adoption of the plan marked an era in the medical affairs of this country, and now for the fourth time, by the session just brought to an end at Washington, the success attained has demonstrated its ever-increasing value. The component societies of the Congress embrace all the principal departments of medicine, and the membership of each includes men who stand at the head of the profession in their particular line of work. The Congress is a common meeting ground for all, and the clinician and the pathologist thus enjoy opportunities for the comparison of experiences that otherwise would be wanting.

The fourteen societies held individual meetings during the mornings, and in the afternoon all came together in general session. As a rule, the papers presented, and the discussions, were of an eminently scientific character, and in keeping with a much-to-be-desired conservatism.

One of the most interesting events of the Congress was the unveiling of the statue of the late Professor Samuel D. Gross, which occupies a commanding position in the grounds of the Smithsonian Institute. Dr. Keen, in his address, paid a tribute to the memory of this famous American surgeon which will be appreciated by those whose good fortune it was to be associated with him.

The social side of the meeting was marked by many pleasant features, not the least of which was the reception at the Arlington Hotel on Wednesday evening after the address of Dr. Welch, the President of the Congress.

With the celebration of the semi-centennial anniversary of the American Medical Association at Philadelphia in June, and the meeting of the British Medical Association at Montreal in August, this Congress forms a galaxy of brilliant medical conventions that will signalize the season of 1897 as the epochal point of the closing years of the century. It is interesting to note, also, that this work will be supplemented by the coming International Medical Congress at Moscow, but in spite of the importance of the latter, it is more than probable that the practical suggestions that will be of most service to the profession of America will be found in the transactions of the three great societies that hold their meetings on this side of the Atlantic.

The report of the proceedings of the Fourth Triennial Congress, as published in this issue of the NEWS, is especially full and complete, and in order to present it to our readers the number of pages of text has been increased to forty-two. The same enterprise that characterizes this presentation will be maintained in reporting the transactions of the American and British Associations.

ECHOES AND NEWS.

Officers of the American Gynecological Association.—At the recent meeting of this society at Washington, the following officers were elected for the ensuing year: President, Dr. Paul F. Mundé of New York; secretary, Dr. J. Riddle Goffe of New York; treasurer, Dr. J. M. Baldy of Philadelphia.

Sad Result of an Explosion at the Woman's Hospital, New York.—An explosion in the laboratory of the Woman's Hospital on the afternoon of April 29th resulted in the death of Dr. Leo Ross, the first assistant house surgeon, and the injury of Mr. A. S. Wolf, the druggist of the institution. While sterilizing a quantity of catgut in alcohol over a flame, the fluid ignited and was scattered over the men. Mr. Wolf, with rare presence of mind, threw himself on the floor and smothered the flames by means of a coat which he wrapped about himself, but Dr. Ross ran across the yard and into one of the operating rooms, where an operation was in progress. Water was thrown upon him and his clothing removed as quickly as possible, but not before his body had been terribly burned. The unfortunate man died early on the following morning.

Obituary.—Dr. Traill Green of Easton, Pa., died in that city April 29th at the advanced age of eighty-four. Few physicians in Pennsylvania were so widely known and respected as Dr. Green, and his loss will be greatly felt. He was graduated from the Medical Department of the University of Pennsylvania in 1835, and in 1837 was appointed professor of chemistry at Lafayette College. Four years later he was called to the chair of natural sciences at Marshall College, and in 1866 the honorary degree of LL.D. was conferred upon him by Washington and Jefferson College. He was the first president of the American Academy of Medicine. He took a deep interest in all scientific matters, and his name has been connected with many famous works. A number of years ago he erected the Astronomical Observatory at Lafayette College at his own expense and presented it to that institution. In addition to a large number of pamphlets and addresses, he was the author of a work on "The Zoological Floral Distribution of the United States." To Dr. Green probably belonged the distinction of being the oldest continuous subscriber to one medical journal in this country. Under date of December 15, 1893, he wrote to the publishers of *The American Journal of the Medical Sciences* as follows: "For more than fifty years I have been a reader of your journal, and during all these years no journal has been received in my office which has been so welcome or so useful to me, and now as I am beyond four score years of age and about to retire from the active work of my profession, I desire to thank you for the help you have been to me."

SOCIETY PROCEEDINGS.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Fourth Triennial Session, Held at Washington, D. C., May 4, 5, and 6, 1897.

[Specially reported for the MEDICAL NEWS.]

GENERAL SESSION.

FIRST DAY—MAY 4TH.

THE first general session of the Congress was nearly a half hour later in assembling than the time announced in the program, and the audience was at first very small. This was due chiefly to the somewhat tardy adjournment of the sections which held meetings in the forenoon.

The meeting was called to order by DR. LANDON CARTER GRAY, of New York, Chairman of the Executive Committee, who, without formal address, remarked that those present who were familiar with the written and unwritten history of the Congress might feel proud at this fourth meeting. The work done in the various component associations and the work to be done in this is sufficient evidence of the activity which is holding its own with the rivalry of the various medical congresses of the present time. After expressing thanks for the honor of having the privilege of opening the Congress, the speaker introduced the President, DR. WILLIAM H. WELCH of Baltimore.

Dr. Welch, in assuming the chair, remarked that he would follow the example of the Chairman of the Executive Committee and not make this the occasion for a formal address. The success of the Congress, he said, depends upon scientific work, of which the program promises an abundance. He also thanked the Congress for the honor conferred upon him by electing him to his office, as well as the officers of the Congress who had worked so faithfully in arranging the program, from the character of which he believed that their efforts would be well rewarded.

The chairman then announced a

BUSINESS MEETING

of the Congress, called in accordance with a resolution passed at the last meeting.

DR. WILLIAM K. SIMPSON of New York explained the nature of the business before the session.

Dr. Simpson stated that the question before the meeting was the consideration of a motion of Dr. White made at the last meeting and laid upon the table, but subsequently reconsidered and made the special order of business at this session. The motion was that the name Washington be stricken out of the by-laws of the Congress as the invariable place of meeting, and that it be left to the will of the Congress at each meeting to select the place for the next meeting.

DR. C. H. MASTIN moved that the question be laid upon the table. This was carried. Dr. S. C. Busey of Washington then moved that the vote just taken be reconsidered and that this present motion be laid upon the table. This motion was also carried.

GENERAL BUSINESS

being made the order of the day, DR. JOHN B. ROBERTS of Philadelphia offered a resolution to the effect that the Executive Committee be instructed to obtain reduced railroad rates for those desiring to attend future meetings of the Congress. Carried.

DR. S. C. BUSEY then reported that he had been instructed by a certain committee on vivisection now in session in this city, and composed of representative men from scientific, educational, and medical institutions, to report to this body and request such action as it may deem proper. A bill is now before the Senate which has been twice reported upon favorably. Twice this committee had strongly opposed the passage of the bill and they thought that their opposition had, in part at least, prevented the vote of the Senate. These two protests were simply scientific documents in favor of vivisection. They had, however, lost to the opposition some of its best friends and they felt that something more should be done, lest these lost friends might become open enemies. The speaker had recently addressed a letter to Senator McMillan, asking for an opportunity to appear before the committee to which the antivivisection bill had been referred, but the only reply was a statement that his letter had been received and referred to the committee. There is danger every day that the matter may be called up before the Senate and the bill enacted without further opportunity being given for opposition. Another difficulty heretofore was the fact that when a notice was given to any committee or individual to appear before committees of the Senate, sufficient time was hardly given for the person notified to get to the Capitol. He desired, therefore, that the Congress of Physicians and Surgeons should protest against the passage of the bill, in the hope that a protest from a body of such scientific prominence as this might carry more weight. He also requested that the Chair appoint a committee with power to take any action in its judgment proper for preventing the passage of this bill.

SURGEON-GENERAL STERNBERG corroborated the statement of the last speaker in regard to the lack of opportunity to prepare any defense when called upon by the Senate committee, and requested that the committee to be appointed by the Chair should consist of non-residents of Washington. He remarked further that the strongest possible resolutions against this bill had been presented to the committee of the Senate, but that it was very doubtful whether such resolutions were ever read by a large number of the committee and hence they were of comparatively little effect.

The Chairman of the Committee of Arrangements then announced various receptions and entertainments for the benefit of members and guests of the Congress. Among these was a reception by the President of the United States on Wednesday afternoon, a dinner at the Arlington in the evening, and a "smoker" by the Cosmos Club, Thursday evening.

The hour for the regular session of the Congress having arrived, the chairman announced as the subject of consideration,

THE GOUTY AND RHEUMATIC DIATHESES AND THEIR RELATION TO DISEASES OF THE EYE.

The first paper announced was that of DR. CHARLES STEDMAN BULL of New York. The title of the paper was

LESIONS IN THE RETINAL VESSELS, RETINA AND OPTIC NERVE, ASSOCIATED WITH GOUT. (See p. 578.)

DR. S. OLIN RICHEY of Washington followed with a paper, entitled

GOUT AND RHEUMATISM AS FACTORS IN THE ETIOLOGY OF GLAUCOMA.

The essayist premised the reading of his paper by a few remarks in support of the positions taken by the previous speaker.

He then said that the least confusing presentation of the subject is under its two extreme forms, acute inflammatory glaucoma and chronic simple glaucoma. All other varieties occur between these two, partaking more or less of one or the other, due to the same cause in different degrees of intensity; including secondary glaucoma, so-called, which may be secondary to keratectasia, or fistula of the cornea, to iridocyclitis, or retinal hemorrhage, dependent upon gout; occlusion of the pupil, luxation of the lens, intra-ocular tumors, choroiditis, myopia—any of these, he said, may cause the increase of tension of a pseudoglaucoma, but not the intra-ocular tension of true glaucoma.

The essayist then presented the following propositions:

1. Increased intra-ocular tension in glaucoma is caused chiefly by distension of the blood-vessels internal to the sclerotic; rarely, and to slight degree, by derangement of intra-ocular secretion, or excretion.

2. Associated with increased intra-ocular tension is high general arterial tension, or arteriosclerosis, pulsation of the intra-ocular arteries and veins, with probable hypertrophy, but at least functional disturbance, of the heart.

3. As a result of persistent venous stasis, thrombosis and hyperplasia of connective tissue with substitution (substitutive fibrosis) takes place in all the tissues of the bulb.

4. In chronic glaucoma, the *materies peccans* of rheumatism cannot be excluded as a factor in causation. No reason appears for suspecting it of any agency in acute glaucoma.

5. Every form of glaucoma is owing primarily to gout (or goutiness) or to acquired syphilis in its tertiary stage.

6. Iridectomy, the first violence of the attack being past, so reduces intra-ocular pressure as to permit the venæ vorticosa to be emptied, thus restoring the intra-ocular circulation and establishing normal tension. Any operation which lessens the surface pressure upon the vascular system within the eye, whatever the result, seems in reason open only to this explanation, for such vessels have no vasomotor system and no power of contraction, but dilate and contract in response to the greater or less force of the extra-ocular blood current.

The essayist then considered the various influences, physiologic and pathologic, which influence intra-ocular tension. He thought that the only rational explanation of the benefit which follows iridectomy in glaucoma is, that a happy moment is chosen when the first force of the storm is spent, and the operation, by easing the pressure upon the intrabulbar tissue and vessels, permits a removal of the venous stasis, and the active circulation to be restored.

Reasoning directly and by exclusion from unquestioned facts led the speaker to the conclusion that a condition always found in acute glaucoma which will account for all its features offers the true explanation of this form of disease. This he stated as follows: A great engorgement of the intra-ocular blood-vessels, overfilling the space within the sclerotic, most so posteriorly, about the entrance of the short ciliary arteries, and the two long ciliary arteries which pierce the sclerotic at a right angle, elongates the corpus vitreum in the direction of the length of the vessels by lateral pressure which is increased by the acute venous stasis and the advancing of the corpus vitreum, lens, and iris, by pressure from behind. This reduces the depth of the anterior chamber, and applies the iris to the cornea, thus obstructing the anterior channels of filtration, and thus produces increase of intra-ocular tension.

The engorgement of the fundus oculi existing in acute glaucoma, always in direct ratio to the violence of the attack, shows it to be directly vascular in origin. A state of the system which leads to a reduction in the caliber of the peripheral arterial vessels, demanding an increased effort on the part of the heart, will account for this.

Whether the intra-ocular vascular engorgement is ever excited by the precipitation of sodium biurate within the eye or not, the author thought, would probably be settled by accidental observation. He did not believe it necessary to assume such a possibility.

Turning his attention to chronic simple glaucoma the essayist remarked that this differed so much from the other forms of the disease that some observers had been led to doubt whether it be glaucoma at all. He, however, considered it glaucoma, a chronic interstitial ophthalmitis. It is of slow development, preceded for years by a slowly increasing intra-ocular tension, with palpitation and uncertain action of the heart. Age is a predisposing factor only, as may be also a neoplasm found within the orbit. The important factors in the arthritic diathesis, the author believed, are an excess of uric acid and an excess of lactic acid—he holding the theory that this acid is the cause of rheumatism. He did not accept the belief of Haig that both gout and rheumatism are due to uric acid.

The essayist then considered at some length the similarities and dissimilarities between the gouty and rheumatic diatheses, with abundant references to the literature of the subject.

The next paper was read by DR. S. D. RISLEY of Philadelphia. Its title was

CATARACT AND ITS ASSOCIATION WITH THE GOUTY AND RHEUMATIC DIATHESES.

The essayist did not think it difficult to trace a distinct relationship between a large group of ocular affections and the lithic acid diathesis. In support of this, he referred to the frequency with which ocular manifestations, as well as the general health of persons suffering from eye symptoms, improve by a change to out-door life with attendant muscular exercise, deeper breathing, and increased excretion. He thought that not only the relationship of this diathesis to the milder forms of ocular trouble is overlooked, but that too often we fail to recognize the relation which exists between it and the more serious affections of the eye that occur especially during and after middle life.

The diseases of the heart and general vascular tree, the renal and hepatic complications, associated with and in some sense dependent upon impairment of the ultimate processes of nutrition, the high arterial tension, the hypertrophied left ventricle, the chronic nephritis, and contracted kidney, the rigid arterial walls becoming atheromatous, angina, apoplexies, present a picture of serious disease which we are too often called upon to treat.

It is not to be supposed that under these conditions the ocular blood-vessels can escape the disaster which has fallen so heavily upon the general vascular system, or that the eye alone should escape the general impairment of the nutritive functions. We are rather prepared to expect the striking picture of disease so frequently presented, when we recall the fact that the choroid is a mesh of blood-vessels ramifying in a stroma of loose connective tissue. In the steadily advancing degeneration of the retinal blood-vessels in glaucoma, we see the arterio- and phlebo-sclerosis, the formation of yellowish-white spots of exudation in the region of the macula or between the macula and optic nerve, or possibly more widely distributed, or the innumerable small retinal apoplexies of hemorrhagic retinitis. In later stages of nephritis, or perivasculitis and hemorrhagic glaucoma, and also the choroidal disease which so often precedes cataract, these changes in the blood-vessels the essayist believed had in many cases been going on for years before the ocular defects became apparent. It is this fact he thought which made these ocular hemorrhages so ominous of cerebral apoplexy. The fact that these changes are usually found in or after middle life, had drawn too much attention to age as an etiologic factor.

Hard cataract has been regarded as a development of old age to the exclusion of other influences in its production. It should be borne in mind, he said, that while the lens loses its elasticity and becomes hard or even straw colored as age advances, it is only in exceptional instances that it loses its transparency to a degree which seriously impairs the acuity of vision. When therefore the lens undergoes not only this physiologic hardening but becomes also opaque it should suggest the presence of pathologic causes for this remarkable occurrence.

It is also true that opacity of the lens occurs in cases in which we can discover no evidence of the rheumatic or gouty diathesis either in themselves or their ancestors, yet even in these individuals the incipient cataract is so uniformly preceded by retino-choroidal disease and vitreous degeneration as to enforce the opinion that the opacity of the lens is a result of impaired nutrition caused by the associated affections of the uveal tract. The essayist adduced sixty successive cases from practice in more than half of which there had been a long period of asthenopia and "weak eyes" before the occurrence of cataract. In them he said there could be no doubt of the relation of cause and effect between the advancing opacity of the lens and the attending pathologic conditions of the uvea.

It is not surprising that the lens and vitreous body should undergo degenerative changes as a result of pathologic processes affecting its food-bearing membrane. The less vicious forms of uveal disease may also be influential in leading to impairment of nutrition of the lens and causing it to become opaque and that the gouty and rheumatic diatheses are among the most frequent causes of these chronic subacute forms of disease affecting the uvea. Careful study would reveal that the entire choroidal tract is more or less seriously involved in every case. It not infrequently happens that the recurrence of iritis is due to the lighting up of latent choroiditis under exacerbations of the rheumatic or gouty diathesis. All attacks do not pass to iritis, but each attack affects more and more profoundly the nutrition of the eyeball. Such attacks are often attended by transient increase of tension, a steamy cornea, and foggy, vitreous body. Examination with a lens resolves this want of transparency into fine granular deposits in the vitreous, which clear up as the attack subsides. Upon repeated exacerbations, fine web-like opacities form, which float more freely as the vitreous degenerates and loses its normal consistency. The nucleus of the lens becomes more and more plainly outlined and the lens substance more reflecting. In many cases banks of opacity form in the periphery, from which spicules of opacity sooner or later project along the capsule toward the pole.

The essayist then reported at some length the history of a case which he had had under observation for a number of years, and in which the conditions were as he had described in the above report. In conclusion, he adduced a number of other considerations which confirmed his belief that the changes in the lens, choroid, and retina may be brought about by the rheumatic or gouty diathesis.

The next paper was by Dr. ROBERT SATTLER of Cincinnati upon

GOUTY AND RHEUMATIC AFFECTIONS OF THE UVEAL TRACT.

He called attention to the fact that in the history of gout mention is early made to the affections of the eye, especially of iritis (ophthalmia arthritica). Much later other parts of the uveal tract were also recognized as the seats of gouty and rheumatic affections, the ocular lesions either arising primarily from this part or appearing secondarily, and associated with similar lesions in other parts of the eye. He then referred to the positive knowledge we possess in regard to the clinical manifestations of gout and rheumatism, although their etiology and pathology remain somewhat obscure. The remainder of his paper may then be briefly summarized as follows:

1. Can gout or rheumatism be considered the principal etiologic factors in those cases of iritis and irido-choroiditis in which a searching examination fails to disclose that the disturbances of the joints are dependent upon syphilis, gonorrhea, chronic lead intoxication, malaria, anemia, and other actual or alleged constitutional causes?

This, the speaker said, is generally admitted, although with varying stress.

2. As to the relative frequency of gout, and rheumatism producing ocular lesions, the major share is assigned by Hutchinson to gout, while the liability to iritis is held to decrease in proportion to the prominence of purely rheumatic symptoms.

The essayist stated that it had been his experience to meet with a rather large number of cases of iritis which must be classed as rheumatic affections.

3. At what period are iritic and other affections of the uveal tract apt to occur? Are they more common during the acute outbreaks of local gout or rheumatism, or during the latent periods of these affections?

In answer to this question, the speaker thought that, as a rule, ocular complications appear during the early manifestations of the uric acid diathesis, or during the stage which precedes for a longer or shorter period acute outbreaks of either gout or rheumatism, or during the intervals of acute or subacute recurrent attacks. He could find no evidence on record to show that they ever occurred during the acute attacks. If such were observed, he would regard it as nothing more than a mere coincidence.

4. Do the ocular disturbances, and particularly the lesions of the uveal tract, offer confirmatory evidence for any one of the many theories advanced to explain the morbid changes which affect the joints, tendons, and fibrous tissues in gout and rheumatism?

It was answered, that there was nothing distinctive which would enable us to recognize without fail, the iritis or irido-choroiditis of gout or rheumatism.

5. For clinical purposes, we may speak of three stages in the process of gout and rheumatism: (*a*) During the stage before local gouty or rheumatic invasions of the joints occur, we can hardly speak of gout or rheumatism as such, but must look upon these manifestations as goutiness, or a rheumatic or rheumatoid tendency. (*b*) After the malady declares itself, it may happen that its characteristics may be preserved for a long time, or even become permanent. (*c*) As either disease progresses or develops, it may partake more or less of the characteristics of the other until such an intimate blending takes place that by common consent it is termed "rheumatic gout."

In the stage of goutiness and of early gout, we meet with the typical "hot eye" appearance of the English ophthalmologists, but rarely with primary or isolated gouty iritis. The most frequent, and at the same time most treacherous, lesion, however, is an insidious variety of exudative choroiditis which often, in spite of the most rational medical treatment and more conservative surgical measures, necessitates enucleation.

An interesting case was then reported in which an iritis was treated on the theories above stated with success.

The speaker said that we not infrequently meet with lesions of the uveal tract, in which a distinct history is obtained which conclusively suggests either a rheumatic tendency without disturbance of the joints or one in which several undoubted paroxysms had preceded the ocular disturbance. Although the designation "rheumatic" is vague, there being no pathology on which to base it, it is supported by a mass of clinical facts.

The most frequent inflammatory affection due to this cause is iritis, either the acute plastic or the chronic variety. It may be the expression of a general irido-choroiditis or the results of an acute process, beginning and confining itself to the iris or the anterior portion of the uveal tract. It can be held that in the group of rheumatic gout, which is a blending of gout and rheumatism, lesions of the uveal tract and iritis in particular may occur. The speaker's own observations had familiarized him with a number of typical cases conclusively setting forth iritis as one of its common complications. Cyclitis and choroiditis are not so common.

If iritic and other complications occur in persons with acute or chronic joint affections in whom syphilis, gonorrhea, chronic lead poison, and other recognized causes are found, are they more apt to occur if such persons are gouty or rheumatic?

This, the speaker considered an interesting point to determine. Mr. Hutchinson has answered the question for us. It demands and awaits further corroboration. In the only case of gonorrheal rheumatism with iritis which had come under the observation of the speaker, a gouty history was obtained.

Concerning other causes, the experience of the essayist had been too limited to justify him in expressing a definite conclusion, but he inclined to the opinion that a gouty or rheumatic heredity is of considerable importance in exciting or increasing the tendency to iritic or other complications.

RHEUMATIC AND GOUTY AFFECTIONS INVOLVING THE CORNEA, CONJUNCTIVA, AND SCLERA

was the title of a paper read by **DR. R. A. REEVES** of Toronto.

He mentioned the difficulty of proving a rheumatic or gouty affection of the eye, and that, although chronic rheumatism is regarded as a cause of many eye affections, it is only in a certain proportion of cases an affection of the uvea. Yet the *materies morbi* of gout is often present in the system. Along with over-indulgence of appetite and profound worry and care, the relation of the diathesis cannot be ignored. The ophthalmoscope may show the presence of retinitis and choroiditis, and the diagnosis is made at a glance.

So many surface lesions of the eye are now attributed to a micrococcic origin that the essayist feared this factor in etiology might be carried too far, and recommended that the blood and other fluids be more carefully scrutinized.

In corneal affections with these diatheses, we usually find a wide-spread obscuration, resembling in appearance a glass that has been breathed upon. Desquamation of the surface epithelium occurs only exceptionally. An interstitial variety has also been described. This is especially toxemic in character and allied to syphilis. The affections which lead to uveitis may also lead to parenchymatous choroiditis without tendency to suppuration. The iris is exceptionally involved. The process may be associated with indelible sclerosed patches. The treatment consists of hot poultices and local injections of pilocarpin and eserin. De Wecker recommends iridectomy. This would appear to be allied to the catarrhal ophthalmia of which we hear but little at the present time, but which Mackenzie insisted upon a few years ago.

Centripetal corneal ulceration is likely to occur. Band-like opacities of the cornea always give rise to a suspicion of gout. The essayist then reported three cases of ephemeral conjunctivitis in subjects with gonorrhea which appeared to be due to a pseudo, or actually acute rheumatic tendency. Sir Dice Duckworth says that rheumatic and gouty deposits occur in the conjunctiva of the lids.

There is an interesting variety of episcleritis denominated by Fuchs, *episcleritis fugax*, the "hot eye" of Jonathan Hutchinson, more frequent in men than in women, attended by photophobia, lachrymation, and pain, the attacks lasting from one to eight days. The treatment consists of the topical application of pilocarpin. Episcleritis proper is distinguished by several authors as a circumscribed inflammation of the anterior part of the sclera producing later a widely spreading swelling two to five lines in diameter, one to two lines from the corneal margin, never attended by ulceration, but undergoing absorption in the course of weeks or months. It seldom occurs singly, one nodule usually appearing as another disappears. At times there is marked pain and irritability of the eye. It occurs especially in adults, some of whom are subjects of gout, and some of rheumatism. The treatment is the administration of salicylate of soda and the subconjunctival injection of pilocarpin.

Scleritis attacks any part of the globe, is not nodular, and is essentially chronic and recurrent. It is, as a rule, very painful, leaving a dusky, or slate-colored zone. The speaker urged recourse to pilocarpin in the treatment.

The malignant form of uveoscleritis, with staphylomatous swelling and ultimate loss of the eye, is not included, being connected directly with the scrofulous or strumous diathesis, and not with gout, or rheumatism.

DR. J. M. DA COSTA of Philadelphia stated that he thought it well to bear in mind the real nature of the diseases under discussion. In regard to rheumatism, the typical phenomena of swollen joints, acid perspiration, and tendency to heart affections, leave no doubt as to the character of the affection. But in so-called chronic or rheumatic gouty affections there is always doubt, and four-fifths of all cases called chronic rheumatism are not rheumatism at all. We should therefore carefully scrutinize all affections of the eye of the character ascribable to chronic rheumatism. He had no doubt that these would, in the future, be so reduced that there will be very little left of them.

We know more of the pathology of gout than we do of rheumatism. Whether as cause or effect, connected with faulty secretion or faulty excretion, a morbid state occurs in which uric acid is concerned. He doubted the existence of such a disease as rheumatic gout. There is such a disease as rheumatoid arthritis, in which the joints swell and uric acid is not found in the urine. It is not connected with gout or rheumatism. It is of great importance that we learn to associate or disassociate certain eye affections with this disease, and not with gout or rheumatism.

In general practice he had, in acute rheumatism, met affections of the eye, usually inflammatory in nature, ophthalmia, conjunctivitis, and the like. The most common had been conjunctivitis, and sometimes iritis, occurring during the attack of acute rheumatism, sometimes associated with the acute endo- or pericarditis. But gouty inflammation of the eye occurs not only in acute outbreaks of gout, but very frequently when no acute outbreak exists. It is very common to have this affection originate in one eye and then pass to the other. During a long experience, he could scarcely remember an affection of the eye connected with a pure rheumatoid arthritis. Nor do endocarditis and pericarditis occur in this connection.

A certain number of persons have what is called suppressed gout, or, better termed, lithemia. In this, inflammatory affections of the eye are very common. These affections also commonly begin in one eye and pass to the other; sometimes associated with marked attacks of headache. The key to gouty cases is furnished in the careful examination of the urine. In conclusion, the speaker reported the case of a prominent gentleman who suffered from repeated attacks of eye trouble with headache, in whom careful regulation of the diet, with the administration of lithia water and colchicum had resulted in a period of freedom from all symptoms for the last two years. There was no evidence of gout in the case, unless a slight tendency to asthma, but the result of treatment had been sufficient to warrant the conclusion that the eye trouble was due to that diathesis.

A session was now held under the auspices of the American Otolological Association.

A paper was read by Dr. Clarence J. Blake of Boston on

THE RELATION OF OTOLOGY TO GENERAL MEDICINE.

The author remarked that the gifts of otology to general medicine are nowhere more clearly shown than in the diseases of the ear occurring coincidently with the exanthemata of childhood. He insisted upon the importance of early and repeated examinations of the ears of children suffering from the acute exanthemata. Attention was also given to the occurrence of ear complications in diseases of the pleural cavity in childhood.

The importance of testing the hearing of school children should interest and influence the profession at large. The generally received opinion that diminution of hearing in children in consequence of disease is rare, is a mistake. Very nearly 25 per cent. of the patients attending our aural clinics are children under fourteen years of age; of this number 50 per cent. suffer from suppurative inflammation of the middle ear, and of this number 10 per cent. or more owe their origin to the exanthemata, while throughout the United States 27 per cent. of deaf mutes have suffered from suppurative middle ear disease in early childhood.

The surgery of the ear requires a wider range of skill than general surgery. We have not only to attempt to save life, but also to conserve, so far as possible, the hearing power and leave undisturbed the equilibrating function of the ear, and also to avoid injuring important structures closely contiguous to the operative field.

The so-called chronic catarrhal inflammation of the middle ear is one of the most frequent diseases of the ear which come under the consideration of the general practitioner, making in the temperate zone about thirty per cent. of all the material ultimately referred to the aural specialist. Another example is chronic non-suppurative middle ear disease, in which the deleterious changes in the lining membrane of the tympanic cavity are furthered by general nervous over-strain.

One of the most striking examples of the elucidative work of otology is that which relates to the definition and explanation of the curious complex of symptoms of which vertigo is the most marked manifestation. It is now a recognized fact that an effusion or hemorrhage in the labyrinth may affect the hearing or the balancing power or both. Another subject which should command the attention of the aurist and general practitioner is the "fatigue of deafness," a common and often underestimated factor in the causation and persistence of neurasthenia.

In conclusion the speaker urged the importance of a more thorough teaching of otology in our colleges. The inducement which led the student thirty years ago to take up the study of otology, was because it presented a promising domain for original research, and this is as true to-day as it was then.

(Continued on page 608.)

AMERICAN SURGICAL ASSOCIATION.

Eighteenth Annual Meeting, Held at Washington, D. C., May 4, 5, and 6, 1897.

First Day—May 4.

The President, Dr. John Collins Warren of Boston, delivered an address upon

THE INFLUENCE OF ANESTHESIA ON THE SURGERY OF THE NINETEENTH CENTURY.

The records of ancient history show that physicians and surgeons had in mind the possibility of an agent being discovered, the use of which might prevent pain in surgical operations. Although it has been said that the discovery of surgical anesthesia was a surprise, that its advent was marked by no tentative steps, that it appeared to have had no preliminary experimental stage, yet a retrospective glance at the history of the previous half century will show that the idea was working in men's minds more powerfully than before, and that, as Paget says, a great truth lay unobserved, though it was covered by so thin a veil that a careful physiologic research must have discovered it.

The well-known observations of Davy upon nitrous oxid and Faraday upon the vapor of ether are among the earlier of the reliable records; while of those which immediately led to the introduction of anesthesia into surgical practice the experiments of Colton and Wells with the former and of Long, Morton, and Jackson with the latter stand preeminent. The work of the several Americans who were most active in the application of the discovery began to attract public attention in 1844 to 1846, and it was upon the 16th of October of the latter year that Dr. John C. Warren successfully performed the first surgical operation under anesthesia in the Massachusetts General Hospital, Dr. W. T. G. Morton administering ether. On December 21st, Liston, in London, amputated a thigh and performed an evulsion of the toe nail with perfectly satisfactory results.

Thus the great step was taken, the "thin" veil was suddenly thrown aside, and what had been before a surmise of the scientist, a pastime of the idle student, and the dream of the surgeon, suddenly assumed practical form and shape and became a living truth, revealed in all the fulness of perfection.

The effect upon the practice of surgery was immediate and revolutionary, both in extending its domain and increasing its activity. The record-books of the Massachusetts General Hospital show the total number of operations during the five years following the introduction of ether was over two and one-half times as great as that in the five preceding years.

The question whether anesthetics increased mortality or not was one which was much discussed formerly. Simpson believed that they did not. Arnott brought forward figures to show that the mortality had been increased 12 per cent. in amputation and 28 per cent. in lithotomy. Erichssen also believed the mortality-rate had increased since the use of anesthetics in operative surgery. Curling gives the mortality of amputations of thigh and leg in the London hospitals for 1837 to 1843 at 41 per cent. During 1847, in 73 cases in which an anesthetic was given, the mortality was 19 per cent. At the Pennsylvania Hospital the mortality of amputation from 1835 to 1840 was 36 per cent.; from 1840 to 1845 it was 20 per cent.; from 1850 to 1855 it was 23 per cent., and from 1855 to 1860 it was 31 per cent. At the Massachusetts General Hospital the death-rate was, as a rule, decreased in the different classes of operations. The rapidity with which certain operations were performed undoubtedly favored asepsis, particularly in all aseptic cases, and probably in any operation which could be done quickly and thoroughly. In many cases of spreading sepsis rapidity was a bar to thoroughness, and results were correspondingly unsatisfactory.

When we reflect how few of the aids to surgical diagnosis were possessed by surgeons in 1846, the amount of work which they accomplished presents all the stronger contrast. They had no endoscope, no ophthalmoscope, no modern aspirating-needle, no clinical thermometer, and no laryngoscope. The stethoscopes were far from perfect. Examination of the blood and quantitative analysis of the excretions were unknown. The microscope was just coming into use for pathologic purposes. They possessed, however, an excellent technic so far as operative surgery was concerned. Their capacity for operating was unlimited, but their judgment was not guided by the many aids which serve us to-day.

It is interesting to note, however, the strangely appropriate order in which the great facts of medicine and surgery were given to the world in this progressive century. Hunter had already roused the thirst for knowledge which led others to rush forward and immortalize themselves as pioneers in anatomy, like Bichat, or in modern surgery, like Cooper. Then came the work of the pathologists, such as Cruveilhier, and the host of German pioneers. Just as the surgeon had brought his operative technic to a high degree of perfection, and science had made a practical instrument of the microscope, and preparation had been made for another advance all along the line, then came anesthesia, which widened the field of research sufficiently to occupy the world busily for another quarter of a century. It gave to surgery a more powerful impetus than it did to experimental medicine. At a moment when surgery seemed rushing wildly onward to its own destruction, with science lagging far behind, Lister came to the rescue, and scientific equilibrium was again restored.

"Gentlemen, the Old Massachusetts General Hospital stands as it did in 1846, with its sightly Bulfinch dome and granite columns. From a scientific standpoint it seems an antiquated structure in comparison with the modern pavilion wards, laboratories and operating-theaters which surround it, but it will never be torn down. It will always remain as one of the conspicuous landmarks of this wonderful century—as a shrine of surgery sacred to that moment 'when the fiercest extremity of suffering was steeped in the waters of forgetfulness and the deepest furrow in the knotted brow of agony was smoothed away forever.'"

DR. JOHN HOMANS of Boston read a paper, entitled

THE INDICATIONS FOR AND THE TECHNIC OF HYSTERECTOMY.

The author considered that the uterus should be removed for intractable hemorrhage and for malignant disease, as well as in many cases of uncontrollable prolapse, incurable chronic inversions, cases of infection, and to cure puerperal sepsis. He dwelt at some length upon the technic of hysterectomy, vaginal and abdominal, and a combination of the two methods, described various special manipulations, dwelt upon the importance of the preparation of the patient, and referred to the question of using a Jacques' self-retaining catheter in the bladder after these operations.

DR. H. H. MUDD of St. Louis in discussing this paper said that hysterectomy for fibroid tumors had a technic which was not uniform and which varied with the special indications. He expressed himself as especially gratified to hear that Dr. Homans discards the clamp. In his opinion, hysterectomy for suppurative periuterine inflammations should be strictly limited to a very narrow field. Vaginal hysterectomy for malignant disease is effecient and desirable for those cases where the disease is limited to the external os. The extension of carcinoma of the os is by infiltration of new tissue in two directions; first, along the vaginal tissue, and, second, into the broad ligiments. Most of the cases in which malignant growth begins in the body of the uterus should be subjected to abdominal hysterectomy, as this is certainly the only method of operation where the uterus is secondarily involved. The greater number of cases of malignant disease which require hysterectomy have their origin in the os, and if presented early to the operator may be removed by the vaginal route. The preparation of the patient for these operations is in accordance with the general rule, but the author's preference is to have the patient anesthetized upon the operating table in order that the time necessary for the anesthetic may be as short as possible. The Trendelenburg position is preferable, and the abdominal incision should be free enough to give room for rapid and accurate work. If the growth is soft and pliable, it should be cleansed with a curette, washed with sterile water, wiped with a gauze sponge and the firmer margins approximated by sutures.

After describing at some length the various steps of the operation, the question of the ligature was taken up, and silk was advised to be used in securing the ovarian artery. It may be cut short, or left with one end resting in the vagina. Hemorrhages should be well controlled by ligatures, or by clamps. The author has discarded iodoform gauze in all cases where it comes in contact with the peritoneum, as he considers it a dangerous agent.

Dr. F. E. Lange of New York stated that in his opinion the principal dangers in these cases were hemorrhage and sepsis, and he thought it a good idea to lay down certain general rules to be followed in approaching all these cases. All working in the dark should be avoided. The speaker had occasionally employed a crucial incision in these cases, and in some had made an incision above the symphysis pubis, but found that in some of the crucial operations the fleshy portions do not offer enough resistance, and this is especially true where the patients have not been pregnant before the operation and become so afterward. In some cases such an extensive raw surface has remained after operating that it has been necessary to use the large omentum in order to prevent the agglutination of the intestines. Tha paravaginal, or pararectal incision has also been employed to good advantage, which consists of the separation of all of the soft parts along the side of the rectum. The hemorrhage is considerable in these cases, and it is well to secure the vessels as much as possible before they are cut. The advantage of this incision is that the floor of the pelvis becomes much more accessible. Provision against infection is also greater because the drainage away from the peritoneal cavity takes place.

Dr. Dudley P. Allen referred to an operation in which the patient is placed in the Trendelenburg position, the fibroid is drawn over the pubis, and is separated from the surrounding structures with a pair of scissors. The uterus is divided from the bladder anteriorly by a few cuts of the scissors, and the broad ligament is held between the thumb and finger. This operation, up to the present time, has been very successful.

Dr. Albert Vanderveer of Albany said he agreed with Dr. Homans that when curetting and all intelligent lines of practice had been carried out without recovery for the correction of misplacement, removal of the uterus is the proper procedure. As to the method of removal, he declared himself firm in the conviction that if the vagina is normal, or comparatively so; if the cervix, particularly the external os, is in a healthy condition, the abdominal or supravaginal hysterectomy gives the patient a degree of normal vaginal anatomic relations that is comforting and beneficial to her, in addition to giving the operator an opportunity to examine the pelvis from above, to relieve adhesions, to bring under positive observation the tubes and ovaries, and, if not healthy, to remove them. On the other hand, if there be present decided cystocele, or rectocele, or prolapse of one or both ovaries, then the vaginal route is to be preferred. In his opinion, the clamp should be avoided in the abdominal operation.

He regretted very much the fact that these cases are not brought to the attention of the surgeon before the disease is so far advanced, and referred to the various diseases to which the condition is ascribed, as, for example, supposed change of life or ill-health from the last confinement or miscarriage. Speaking of carcinoma, he considered an operation was called for when it was confined to the uterus, and all suspected symptoms and indications had been confirmed by microscopic examination of specimen removed. When the uterus is not too large from invasion of the body by the disease, when there is no considerable fibrosis present, and when no pregnancy beyond the third month complicates, the surgical route should be vaginal. The presence of a fibroid does not necessarily mean an operation, as many patients suffer so little inconvenience that such a procedure is not called for, and curetting will answer in a few cases. As to the combined operation, panhysterectomy, the author considered that but few cases called for this procedure, but when it is done, surgeons should give themselves the benefit of a free abdominal incision. He objected strongly to taking away any more of the pelvic organs than was absolutely necessary if like good results could be secured by a less severe procedure. In his opinion, it was inadvisable to place a Jacques' self-retaining catheter in the bladder after these operations.

Dr. J. William White of Philadelphia read a paper, entitled

THE X-RAYS IN SURGERY.

He divided the consideration of the subject (1) in its relation to foreign bodies, (2) fractures and luxations, and (3) diseases of bones and joints. He stated that foreign bodies in the cavities of the body could be located by a system of triangulation by means of successive skiagraphs having known relations to one another and to a fixed point on the surface of the body next the plate. Bullets in the cranial cavity have been located and removed, and their recognition is easy in the majority of cases, while in the thoracic cavity they can be located with reasonable accuracy in the trachea, bronchi, lungs, or pleura. Rubber drainage-tubes in the pleural cavity cannot invariably be detected by the Röntgen method, as they seem to be more or less translucent to the rays. Detection of bodies in the esophagus continues to be very satisfactory, and the conditions of foreign bodies in the abdominal cavity are about the same as in the thorax. Bodies in the pelvic cavity can be found by taking skiagraphs with the patient in various positions. With regard to fractures of the skull, it is especially desirable that we should be able to recognize (*a*) fracture of the inner table, (*b*) linear fracture, and (*c*) fracture of the base. Up to the present time there is no case on record of the first two having been done clinically, but it has been accomplished experimentally with entire success. Skiagraphy will doubtless result very beneficially in the future in the prognosis and treatment of fractures and dislocations of the spine, and will no doubt give us great help in obscure cases of fracture of the sternum, scapula, clavicle, and pelvic bones.

On account of the movements during respiration, skiagraphing the ribs is especially difficult, but this movement can be much restricted by a fixed dressing not opaque to the rays. Fracture and luxation of the bones of the extremities can usually be readily demonstrated. Ununited fracture, even in the presence of close fibrous union, can be shown with great accuracy. In disability following old fractures near a joint, skiagraphy has been of the greatest help in determining the mechanical cause of the limitation of motion. Beferring to the medico-legal aspect of this matter, and to the question of whether or not the patient has a right to demand as ordinary care that the medical attendant should have a skiagraph of the fracture taken, the author stated that at the present time he would unhesitatingly answer in the negative. There can be no doubt, however, that skiagraphs will figure largely in suits for damages in the near future. There is no doubt that a definite diagnosis will soon be possible in cases of disease of the bones and joints, and it is evident that skiagraphy has added to the precision of our management of many forms of these diseases. In various forms of cardiac disease, the fluoroscope is likely to be more useful than the skiagraph, as, in the case of organs in motion, the skiagraph can only give the net result during the period of exposure. Referring to the amount of exposure necessary, the author stated that this varies very much, and in the case of stone in the gall-bladder, the thickness of the abdominal walls and the depth of the calculi from the surface played an important part. Renal calculi had been found and successful operations performed based on the skiagraphic evidence, while vesical calculi are more difficult to find on account of the over-lying position of the symphysis pubis. Urethral stone has not yet been seen clinically but seems likely to be easy of recognition. As to the possible therapeutic properties of the rays, they were first thought to be germicidal, but this has since been denied. The author stated that he had directed his attention to the cure of cancer with the rays, and his hopes of success had been somewhat bolstered up by his experience, although as yet he had no results to report. In the meantime he felt confident that no harm could come to the patient, even though the experiment should be unsuccessful.

DISCUSSION.

DR. W. W. KEEN of Philadelphia, in discussing this paper, called attention to the importance of the medico-legal relations of the X-rays, and mentioned a case showing the unreliability of skiagraphs as a means of diagnosis.

DR. CHARLES B. NANCREDE of Ann Arbor dwelt upon the importance of taking skiagraphs in various positions, and quoted cases in support of his statement that one or even two or three pictures should not be used as a basis of diagnosis. He also stated that the fluoroscope will occasionally be successful where the skiagraph has failed, and *vice versa*. He illustrated his remarks with several skiagraphs, and mentioned that an apparatus costing but $50 would throw a spark 7¾ inches and do all that was necessary in the majority of cases.

DR. G. R. FOWLER of Brooklyn dwelt upon the importance of taking a picture in various positions, and mentioned a case in which he was able to demonstrate in a perfectly sound limb an apparent deformity similar to that which existed in a previously injured limb. He also stated that the fluoroscope was often of use when the skiagraphs gave negative results, and laid great stress upon the possibility of defective skiagraphic plates.

DR. M. H. RICHARDSON of Boston showed a number of skiagraphs and emphasized the medico-legal relations of the X-rays. He stated that a number of judges had signified their attention of admitting these pictures as evidence in suits of malpractice.

DR. WILLIAMS showed a number of skiagraphs, and also demonstrated an instrument for showing calculi in the bladder.

DR. CHRISTIAN FENGER of Chicago referred to a case in which search was made for a bullet in the cranium, and in which the soft parts of the skull down to the bone subsequently died, presumably due to too long exposure.

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ASSOCIATION OF AMERICAN PHYSICIANS.

Twelfth Annual Meeting, Held at Washington, D. C., May 4, 5, and 6, 1897.

FIRST DAY—MAY 4TH.

The Association met at 10 o'clock, A.M.

The President, **DR. J. M. DA COSTA** of Philadelphia, in the Chair.

PRESIDENT'S ADDRESS.

The President read his annual address, entitled "Tendencies in Medicine," which will appear in the next issue of the NEWS.

MISCELLANEOUS BUSINESS.

The Council recommended the adoption of the amendment proposed last increasing the membership of the Association from 100 to 125. After discussion this amendment was adopted. Dr. S. C. Busey, Washington, said that he had been requested by the medical staff of the navy to ask that the Association should present resolutions to Congress praying it to enact a law giving the medical staff of the navy a distinct rank, instead of the relative rank now conferred. On motion of Dr. Sternberg, surgeon-general of the army, this was referred to the Council for report.

THE SERUM TEST FOR TYPHOID FEVER.

By **DR. GEORGE B. SHATTUCK** of Boston. He dealt with the cases of typhoid fever occurring in the Boston City Hospital which were tested with Widal's serum. All the tests were made with liquid blood. In the laboratory a longer maximum limit, one hour, was allowed for the reaction than some observers would consider justifiable, though many of the reactions did occur in much less time. The character of the reaction was considered as well as the time within which it occurred. The room culture reacted less promptly than the thermostat culture. Three of the cultures were from the spleens of deceased patients, and one from fluid aspirated from an enlargement, corresponding in position to the gall-bladder, in a patient who was suffering from that disease. Tests made with room cultures had proved so satisfactory that all tests were now made in that way. In these tests the organisms were fewer in number but were larger and more motile, and the reactions, while perhaps a little slower, were so absolute that little difficulty was experienced in making a diagnosis. In the thermostat cultures there was often a small sediment of dead organisms, which if shaken up into the fluid might interfere with the diagnosis. Room cultures could be used for the test when much older than thermostat cultures, the growth being more gradual and the organisms hardier.

An analysis of 116 cases, with a clinical diagnosis of typhoid fever, showed the reaction as follows:

On the 6th day in 1 case.
" " 7th " " 4 cases.
" " 8th " " 6 "
" " 9th " " 5 "
Between the 10th and 15th day 23 cases.
" " 15th " 20th " 16 "
" " 20th " 30th " 32 "
" " 30th " 40th " 13 "
" " 40th " 50th " 11 "
" " 50th " 60th " 5 "
" " 60th " 70th " 2 "
" " 70th " 80th " 2 "
" " 80th " 90th " 0 "
" " 90th " 100th " 0 "

In one case there was a reaction on the 199th day, one on the 110th, one on the 121st, and one on the 122d day. In one case there was no reaction on the 26th day, but it was present on the 27th day; in one case no reaction on the 15th, present on the 16th; in one case no reaction on the 16th or 18th days, present on the 59th day; one case no reaction on 7th day, present on the 9th day; one case no reaction on the 18th day, present on the 45th day.

In five of the cases the serum test gave a positive result, and was of material service in determining a doubtful diagnosis. In one case physical examination was negative; characteristic symptoms were absent, but there was some temperature. There had been cases of typhoid fever in the neighborhood of the patient's home. The serum test gave a good reaction on the twenty-second, twenty-third, and twenty-fourth days. Six weeks before admission to the hospital, the second case recorded suddenly became mentally confused for a short time without losing consciousness. He recovered, but had a similar attack, from which he recovered more slowly and less completely. He was slow in expression and miscalled words. The left leg was swollen and painful on pressure. Blood, albumin, and casts were found in the urine. The attending physician, a practitioner of large experience in typhoid fever, diagnosed serious renal disease, and gave a grave prognosis. On examination in hospital the edge of spleen was felt; otherwise physical examination was negative. Temperature might have been that of the end of typhoid. No diazo reaction. Serum test gave a prompt reaction, and patient made a good recovery.

In eighteen cases with clinical diagnosis other than typhoid fever there was no reaction in fifteen, of which one was phthisis, two pneumonia, two pleurisy, four meningitis, three "febricula," one acute miliary tuberculosis, one appendicitis, one influenza. There was a reaction in three cases—one of pneumonia, one acute miliary tuberculosis, one exophthalmic goiter. In all three of these cases the typhoid reaction was justified, and the test made the diagnosis.

The query having arisen whether the serum from the blood of the negro was more prone than that from the white to produce the reaction, even in the absence of typhoid fever, tests were made on thirteen colored patients with clinical diagnoses other than typhoid. In eight there was no reaction. In three there were reactions more or less satisfactory with thermostat cultures, but none with room cultures. In two there were good reactions. One was a black negress, the other a mulatto born in Africa. They certainly had not had typhoid since entering the hospital, but typhoid could not be excluded from the histories for the previous six months.

The diazo reaction was sought for in 89 of the 125 cases of typhoid fever, and was found in 42 cases and absent in 47 cases. In one case, curiously enough, the diazo reaction was present on the fifteenth day when the serum test was absent, and absent on the fifty-ninth day when the serum test was present.

DISCUSSION.

Dr. A. C. Abbott of Philadelphia said that his experience with the Widal test had been made in municipal practice in Philadelphia, where the conditions were not so satisfactory as in Dr. Shattuck's experience. His, however, corresponded very closely with those obtained at the Boston City Hospital. Out of 68 cases in which a clinical diagnosis of typhoid had been made, the serum test responded in 66.

Dr. J. H. Musser of Philadelphia reported a case which had been brought into the wards of the hospital with no evidence of typhoid fever, but was suffering from marked cerebral symptoms. The serum test was applied, and the reaction was present in a marked degree. Several days afterward meningitis set in and the patient died. In this case the reaction was present all the time, and was the only evidence that the patient was suffering from typhoid.

Dr. William Osler of Baltimore gave an abstract of the experience with Widal's test at the Johns Hopkins Hospital. In forty-four cases the reaction was perfectly satisfactory, and had been found several times very late in the disease. Several cases had been admitted that had suffered primary attacks outside of the hospital, in which a reaction to Widal's test was found. In one case of meningitis the absence of the serum reaction determined the diagnosis.

Dr. W. B. Atkinson of Philadelphia said he would like to know how long the susceptibility of the blood to the Widal reaction would persist. Persons might have had typhoid fever at some previous time, and in a subsequent illness a blood examination would give the serum test.

DR. JAMES TYSON of Philadelphia said that two observations in the use of Widal's test had been made by him which might be of interest. One was a young boy admitted on the seventeenth day of an attack of so-called typhoid fever, having been under the care of a well-trained physician outside the hospital up to that time. He had a temperature ranging from 101° to 103⅕° F., and many symptoms of typhoid. There was no reaction to the serum test, but the diagnosis of typhoid was not changed. He declined rapidly, and the autopsy revealed miliary tuberculosis of the lungs, but no lesions of typhoid fever except enlarged spleen. Another case was that of two sisters, who, after skating on the Schuylkill, had drunk from a hole in the ice. Two days afterward both were taken sick, and both had decided fever and headache, and one had had two attacks of epistaxis. The other had two spots on the abdomen which behaved very much like those of typhoid fever. Two specimens of the blood of the older were examined, the first showing positive, but somewhat slow reaction. An examination of the blood of the younger, sent at the same time, gave a very incomplete reaction. At no time did either have diarrhea. The older never had any spots, while the younger, whose case aborted, and in whom the serum test gave only an incomplete reaction, had only two.

DR. BILLINGS of Chicago said that he had had considerable experience with the use of Widal's test. Failure in its use was often due to the fact that the instructions given by Widal and Johnson were not carried out. The instructions given by the latter were that old culture should be used—that the old culture should be used as a basis, and the new culture made from that. Old cultures were rather easily killed by the blood serum in very many cases, such as septicemia and other surgical diseases. The test was more constantly positive in typhoid fever, and more constantly negative in other diseases.

DR. JAMES T. WHITTAKER of Cincinnati reported a case of the daughter of a physician who was listless, had fever, headache, and a temperature of 100° F. Albumin was found in the urine, and the father thought she had Bright's disease. He came to the conclusion that she had latent tuberculosis, and gave her an injection of tuberculin, but got no reaction. Later he applied Widal's test and got reaction. Had also applied the test in four other cases of ambulatory typhoid, or in protracted convalescence from typhoid, with positive results.

DR. F. C. SHATTUCK of Boston reported the case of a young girl who had been ill for some time with a fever of 104° F. and cerebral symptoms. Afterward the fever abated, but she did not get well, and he was asked to see her. He asked the attending physicians: "Why is this not a case of typhoid?" They said they did not think it was; that it was more like Bright's disease. He took a specimen of her dried blood and examined it by Widal's test and got the reaction. This corroborated the diagnosis in his own mind. The cases of typhoid, complicated with renal symptoms, are misleading, but the outlook is better than if these symptoms exist independently.

DR. JANEWAY said he wished to make a few remarks about the danger of Widal's test. The danger lay in depending upon this test, implicitly, and in its absence, even though the clinical symptoms of typhoid were present, ruling out the diagnosis of typhoid.

GALL-BLADDER INFECTION IN TYPHOID FEVER

was the title of a paper by DR. A. LAWRENCE MASON of Boston.

The speaker said that the normal bile was sterile, but that when the system was weakened by disease the micro-organisms in the duodenum might enter the gall-bladder through the bile ducts. So, when the blood was teeming with micro-organisms they might reach the gall-bladder after a number of days. In a number of cases of typhoid fever complicated with gall-bladder infection, gall-stones had been found. The question arose whether typhoid fever was ever the cause of gall-stones. In nineteen cases recorded associated with gall-stones, they had their first attack of biliary colic after an attack of typhoid fever. As to the treatment, simply tapping the gall-bladder will generally suffice, as in his case, and only in rare cases should laparotomy be resorted to. His conclusions were that the gall-bladder was infected by micro-organisms from the intestines or blood; that gall-stones predispose to the complication; that typhoid fever may lead to the formation of gall-stones in predisposed cases.

HEPATIC COMPLICATIONS OF TYPHOID FEVER.

By DR. WILLIAM OSLER. The rarity of this complication was shown by the fact that in 2000 cases of typhoid fever there were only 5 with inflammatory processes in the liver. The symptoms of the disease and complication very much resemble the appearance of appendicitis. He reported a case of this kind which was operated upon for appendicitis, and when the abdomen was opened it was found that the appendix was normal, but there was inflammatory disease of the gall-bladder, which was very much enlarged. The gall-bladder was tapped, and 100 c.c. of clear fluid removed. The gall-bladder was then packed with gauze, and the patient recovered. Subsequently another operation was performed for the removal of a stone in the gall-bladder. The colon bacillus was present in this case.

DR. WILLIAM T. COUNCILMAN of Boston, in discussing the paper, said that he thought if a thorough examination could be made it would be found that the number of cases in which typhoid bacilli were found in the gall-bladder would be very much larger than was generally supposed. His impression was that they could nearly always be found in a case of typhoid fever. The manner of infection, he thought, was through the blood.

UREA ESTIMATIONS IN CASES OF TYPHOID FEVER TREATED BY THE BRAND BATH METHOD.

By DR. JAMES TYSON of Philadelphia. The paper gave the details of a case of typhoid fever in which the urine examination showed some albuminuria and hyaline casts. In spite of these symptoms the Brand method of treatment was persisted in, and it was found that so far from there being a suppression of urine during the baths the secretion was markedly increased. The albumin bulk remained at one-quarter bulk until fourth day, when it fell to one fifth, and on the seventh day to one-twelfth. After that date it disappeared, and with it the casts. "This is the history of a case of typhoid fever strikingly complicated with conditions which superficial observation would expect to increase any risk to which the patient is subjected by cold bathing, *viz.*, nephritis and deep-seated bronchitis, possibly broncho-pneumonia. So far from aggravating either of these two conditions, both abated and early disappeared."

He said further that the effect of cold baths in exciting secretion of urine has long been recognized, and almost every person who is in the habit of taking a frequent cold bath has experienced such effect in his own person. The sources of urea in the urine in fever are two: (1) the nitrogen in the proteid food ingested; (2) the oxidation of tissue, which is much increased during the fever process. He concluded by saying: "At present my confidence in the hydriatic treatment is such that I would not feel comfortable to treat a case in any other way unless such treatment were insisted upon by the patient."

CANCER OF THE STOMACH IN EARLY LIFE; AND THE VALUE OF CELLS IN EFFUSIONS IN THE DIAGNOSIS OF CANCER OF THE SEROUS MEMBRANES.

By **Dr. George Dock** of Ann Arbor, Mich. The report was of a case of cancer of the stomach (scirrhus) in a boy of nineteen years, with extensive infiltration of the stomach and early obstruction of the cardiac orifice. Metastasis in the peritoneum and pleura with fatty ascites had occurred, followed by effusion in the pleural cavities, first left, then right. In the various effusions were cells which, besides containing fatty granules and vacuoles, showed in a large proportion karyokinetic figures, both typical and atypical. After a reference to the literature, a comparison was made with the findings in other effusions in serous cavities, tending to give to such cells a certain diagnostic value.

Dr. Simon Flexner of Baltimore said that he had performed an antopsy on the body of a young person at the Johns Hopkins Hospital, in which there was a large tumor of the mesentery. The cells of this tumor were so remarkable that he called special attention to them, and it was said that a diagnosis of carcinoma might be made from these cells alone. He worked the case up further, and demonstrated that it was a case of primary tuberculosis of the peritoneal glands.

THE INFLAMMATION OF THE COLON.

By **Dr. Francis Delafield** of New York.

Dr. Delafield read a brief abstract of an exhaustive paper with this title, illustrating it with an extensive series of very large and beautiful photomicrographs. He dealt simply with the forms of inflammation of the colon to be found in and near New York. He divided the disease into (1) A colitis without structural changes in the colon, of which the prognosis is good except in children, and which can be successfully treated in a variety of ways. (2) A colitis with purulent infiltration of the connective-tissue coat, which is regularly fatal, and for which there is no satisfactory treatment. (3) A colitis with exudation, productive of new tissue and necrosis, the inflammation beginning in the glandular coat, which has a disposition to continue for a long time, is sometimes fatal, and is difficult to treat satisfactorily. (4) A colitis with exudation, the formation of false membranes and necrosis, of which the prognosis is serious, and for which the best treatment is the administration of large doses of ipecac and the irrigation of the rectum. (5) A colitis caused by the ameba coli, characterized by necrosis combined with a variety of inflammatory changes, and often associated with similar changes in the liver, of which the prognosis is serious, and for which the best treatment is the administration of large doses of ipecac and the irrigation of the rectum.

He said, as regards the treatment of these different forms of colitis, it seems to me that the first thing to determine is whether the inflammation is confined to the lower end of the colon, or extends higher up. The second thing to determine is whether the inflammation is or is not accompanied by necrosis of portions of the wall of the colon. If the inflammation is confined to the lower end of the colon it can be treated by irrigation alone. If it is confined to the upper two-thirds of the colon it can be treated by drugs alone. If it involves the whole length of the colon both drugs and irrigations are necessary. An irrigation for an adult should consist of as much as two quarts of fluid, and the fluid must run in and out freely. If the colitis is acute and without necrosis, the best fluid is an infusion of flaxseed. If it is a colitis with necrosis, solutions of corrosive sublimate, chlorid of zinc, and formalin have given me the best results. If the inflammation involves the upper part of the colon and is without necrosis, rest in bed, a milk diet, and the preparations of opium and of bismuth are usually all that are necessary. But if it is a colitis with necrosis, ipecac in large doses, castor-oil in small doses, nitrate of silver, salol, and naphthalin are the most useful drugs.

The remaining three papers were read by title.

(Continued on page 614.)

AMERICAN GYNECOLOGICAL SOCIETY.

Twenty Second Annual Meeting, Held at Washington, D. C., May 4, 5, and 6, 1897.

First Day—May 4th.

The President, **James R. Chadwick, M.D.**, in the Chair.

Dr. A. F. A. King of Washington read a brief address of welcome, which was happily worded and to the point.

Dr. Bache McE. Emmett of New York read a paper, entitled

MULTIPLE MYOMATA IN THE ABDOMINAL CAVITY.

The tumors referred to belong to that class of myomata known as leiomyomata or myoma levicellulare, those formed by unstriped muscular fiber. They generally spring from the uterus, but are occasionally found in other organs. It was formerly believed that these growths were caused by "irritation" or "inflammation," but this explanation is hardly sufficient. They develop most frequently in the uterus, as this organ is made up almost entirely of unstriped muscular tissue, and although they are supposed to be permanent, they increase or diminish in size and take on many changes in structure. In the uterus, this is probably due to the contractility of the tissue, to pressure, or to some change in the blood supply; as, for example, when the menopause is established. Although they show little tendency to malignancy, they often degenerate into carcinoma or into spindle or round-celled sarcoma. The symptoms are usually those due to pressure on neighboring viscera.

The author reported an interesting case in which several of these tumors were found in the abdominal cavity of a woman twenty-eight years of age, each having a pedicle of omental tissue and no uterine attachment whatever. The patient was first operated upon in 1894, when a large mass, adherent to omentum and intestines, and attached to the fifth lumbar vertebra, was removed. The left ovary was found to be cystic and was also removed with the tube. On microscopic examination, the tumor proved to be a myofibroma, and the pathologist expressed the opinion that it had at one time been attached to the uterus. The author considered the growth retroperitoneal, as it had raised up the peritoneum and ureter. During the removal of the tumor, the ureter was accidentally severed, and a ureteral anastomosis made to close it. The case was carefully watched, as it was feared obstruction to the outflow of urine might follow. The patient did well and returned home in the fourth week. Seventeen months later she was delivered of a boy by means of forceps. Soon after this a large, hard mass was found on the left side which felt like an ovarian cyst. There was no pain, and it was thought to be a recurrence of the fibroid. Four months later another tumor developed on the right side, both being movable.

A second operation was performed two years after the first, and upon opening the abdominal cavity a long nodular, lobulated mass was found upon the uterus, apparently part of it, and composed of several tumors. On exploring with the hand in the pelvis, it was found that the growths were not connected with the uterus, but were attached to the omentum and surrounded by adherent small intestine. Each tumor had a pedicle of omental tissue which contained blood-vessels. In all, seven of these growths were removed, and the last, which so much resembled a kidney that it was thought to be one until exploration proved otherwise, was attached to the ureteral anastomosis which had been made two years previously. The right ovary was cystic, and was removed together with the tube. Three small nodules were noticed on the left side of the uterus, but these were left untouched. Soon after this operation, a swelling developed at the site of the original tumor—the fifth lumbar vertebra, and rapidly increased in size. This was accompanied by a rise of temperature which reached as high as 104° F., and it was feared the abdomen would have to be again opened. However, she soon began to improve and returned to her home in a few weeks. The tumor is still there and is probably growing, but the patient is doing well and has gained strength and weight.

DR. CHARLES P. NOBLE of Philadelphia read a paper, entitled

THE HISTORY AND PRESENT STATUS OF HYSTERECTOMY FOR FIBROID TUMORS OF THE UTERUS.

The author gave a *résumé* of the development of hysterectomy for fibroid tumors of the uterus, and referred especially to the part taken in it by American surgery and paid a glowing tribute to the operators of this country. He described the different methods of performing the operation: (1) stitching the stump in the abdominal wound; (2) covering it with flaps of peritoneum and dropping it back in the peritoneal cavity, and (3) total extirpation. The following conclusions were drawn:

Surgery is indebted to America for ovariotomy and for hysterectomy for fibroids. Ovariotomy was originated by McDowell in 1839, and hysterectomy must be considered as an outgrowth from it, the first fibroid tumor having been operated upon under a diagnosis of ovarian tumor. The first hysterectomy for fibroid tumor, deliberately undertaken, was performed by Kimball in 1853.

The type of hysterectomy in America has been supravaginal amputation. This method was adopted by Kimball and by Burnham in 1853. Many surgeons of all countries have worked in this field, notably Schroeder, but in the evolution of the operation, the steps in the technic which have rendered it simple and safe have been originated by other American surgeons. These steps are notably:

1. The retroperitoneal treatment of the stump—Emmet, 1884; Eastman, 1887; Dudley and Goffe, 1890.
2. The ligation of the trunks of the ovarian and the uterine arteries in their course through the broad ligaments—Stimson, 1889; Baer, 1892.
3. Amputation through the cervix well below the internal os, and the omission of constricting ligatures in the tissues of the cervix—Baer, 1892. The substitution of a few catgut sutures to close the cervix and prevent secondary infection from the vagina through the cervical canal.
4. The origination of a systematic technic for the removal of intraligamentous fibroid tumors—Pryor, 1894; Kelly, 1896.

The mortality of fibroid tumors is greater than is usually stated. It much exceeds the mortality of operations for the cure of the disease.

The mortality of supravaginal amputation for fibroid tumors of the uterus at the present time is about five per cent.

The mortality of total hysterectomy is greatly increased by the traditional policy of delay in advising operation for fibroid tumors, which still influences both practitioners and surgeons.

Early operation for fibroid tumors should be urged upon the basis of genuine conservatism as contrasted with spurious conservatism. Early operation insures a low mortality. It permits the substitution of myomectomy for hysterectomy in women of child-bearing age in a larger percentage of cases than is possible with tumors of large size. It conserves the life and the health of the patient, and, when myomectomy can be performed, restores her sexual organs to functional integrity.

The policy of delay, or spurious conservatism, conserves only the continued growth of the tumor. It entails upon patients years of invalidism or semi-invalidism, and subjects them to much greater risks than those of early operation. Finally, many of those who have suffered for years in the hope of relief without operation are obliged to submit to hysterectomy when their chances for recovery are much less than had the operation been done early.

The next advance in the treatment of fibroid tumors will be the acceptance of early operation with the definite purpose of substituting myomectomy for hysterectomy in women of child-bearing age, in cases having only a small number of fibroid nodules.

DISCUSSION.

DR. R. S. SUTTON of Pittsburg said the surgical treatment of fibroid tumors of the uterus has been a progressive evolution since the days of Kimball. He did not think, however, that every woman with a fibroid should be operated upon. The late Thomas Keith had made the statement that only ten per cent. of all women so affected died as a result of the tumor when it was left untreated, and that, to make the operation justifiable, the mortality following it should be less than this. The speaker advocated conservative measures in those cases where the tumor caused no symptoms. Operations are dangerous, even in the hands of experienced men, and he thought they should be resorted to only when absolutely necessary.

DR. ARTHUR W. JOHNSTONE of Cincinnati considered the treatment of these cases one of the most important questions in modern surgery. His views on the subject, like those of his teacher, Lawson Tait, who, by the way, was considered very radical, were conservative. The speaker had seen 500 cases of uterine fibroid and had operated on only 100 of them. He occasionally removed the appendages to arrest the growth of a fibroid, and had never lost a case and never seen one which was not benefited by the operation. Some of these tumors are of a lymphoid nature, and in these cases the menopause, whether naturally or artificially produced, has no effect, and nothing but a radical operation will cure them. Such cases, however, are rare. When a case demanded it, he was in the habit of performing hysterectomy, and whenever possible, he left the cervix and never tried to close it, because there was sure to be a certain amount of drainage. Like the preceding speaker, he was in favor of conservative treatment, and thought many women were operated upon who did not require such radical treatment.

DR. B. F. BAER of Philadelphia was also an advocate of conservative treatment, but believed that conservatism in these cases is in the direction of radical surgery. He sometimes did myomectomy, but preferred supravaginal amputation of the uterus. This was the position he held in 1892, and he had had a great deal of experience since then. It is not conservatism to decry an operation which has been successful, and has saved so many lives and so much suffering. He did not believe a fibroid of the uterus could exist and not produce suffering at some time or other, and his experience had led him to advise against waiting for the menopause for relief. It is only exceptionally that the menopause has a beneficial effect, and in 95 out of 100 of these cases he was ready to advise operation.

(To be continued.)

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

(Continued from page 600.)

SECOND DAY—MAY 5TH.

The attendance at the second session of the general congress was fully three times as great as that of the first day. The session was held under the auspices of the Association of American Physicians, the American Physiological Society, and the American Pediatric Society, **DR. WILLIAM H. WELCH** of Baltimore presiding. The subject for discussion was

INTERNAL SECRETIONS CONSIDERED IN THEIR PHYSIOLOGIC, PATHOLOGIC, AND CLINICAL ASPECTS.

The first paper, on the

PHYSIOLOGY OF THE INTERNAL SECRETIONS,

was read by **DR. WILLIAM H. HOWELL** of Baltimore. (Dr. Howell's paper will appear in a succeeding issue of the NEWS.)

Following this, **DR. RUSSELL H. CHITTENDEN** of New Haven, Conn., read a paper on

INTERNAL SECRETIONS CONSIDERED FROM A CHEMICO-PHYSIOLOGIC STANDPOINT.

The essayist desired to emphasize the fact that the symptoms which follow the simple removal of a physiologically active gland from the body result solely from the loss of the gland. When attention was first called to the possibility of producing typical myxedema in monkeys by the removal of the thyroid gland, there was a tendency to explain the phenomena as resulting from an injury of the sympathetic or other nerves of the neck rather than to admit even the possibility of a general or limited disturbance of the metabolism of the body through chemical changes associated with the removal of the gland. It was not until the experiments of Murray made clear the fact that the effects resulting from the removal of the thyroid in man could be overcome, in part at least, by the administration of the gland substance, that scientific investigation took the proper turn, and a full realization of the possible importance of the so-called ductless glands and their internal secretions began to dawn upon the mind. To-day we recognize their functional activity as a necessary element to the welfare of the body.

The literature of the subject was then carefully reviewed. The thyroid gland manufactures one specific substance of marked physiologic power—the so-called colloid of Hutchinson, a body which, although containing phosphorus, is not a nucleoproteid, neither is it allied to mucin. It it peculiar in that it contains iodin. This body, when acted upon by the gastric juice, or by boiling acid, is split into a proteid and a non-proteid part, the latter containing all of the phosphorus and a larger part of the iodin of the original colloid. According to Hutchinson, both parts of the colloid are physiologically active, but the non-proteid part, the iodothyrin of Bauman, is unquestionably far more active than the proteid part of the original molecule. This substance is apparently the physiologic equivalent of the thyroid gland.

For the sake of completeness, the speaker made brief reference to Notkin, whose theories are now known to rest upon a false foundation.

Concerning the other internal secretions, DR. CHITTENDEN had but little to say, owing chiefly to the fact that there is little chemico-physiologic knowledge at our disposal. In reference to the adrenals, however, he stated that there is some evidence of the existence of two physiologic substances, one insoluble in ninety per cent. alcohol—possible the sphygmogenin of Fränkel—which increases blood-pressure; the other freely soluble in alcohol, which causes paralysis of the heart and muscles and death by suffocation. In this connection he called attention to the fact that Oliver and Schäfer have shown that the active principle (or principles) is non-volatile and that its activity is not destroyed by mineral acids or gastric digestion, while alkalies greatly diminish it. According to Marino-Zuco, the toxic action is due to the presence of neurin-glycero-phosphate. There are also some grounds for believing a benzo-catechin-like body to be present, which may exert some physiologic action.

Lastly, in extracts of the testis, a peculiar nitrogenous body, free from oxygen, has been detected, known as spermin, and which is claimed by Poehl to have a marked influence upon metabolism and to act as a true physiologic stimulus. Further discussion of these points, however, at the present time, would have little value.

The next paper,

THE INTERNAL SECRETORY ACTIVITY OF GLANDS IN RELATION TO THE PATHOLOGICAL ANATOMY OF SUNDRY MORBID CONDITIONS (SEE PAGE 581),

was read by DR. J. GEORGE ADAMI of Montreal.

DR. FRANCIS P. KINNICUTT of New York opened the discussion by reading a paper on the

CLINICAL ASPECT OF THE INTERNAL SECRETIONS.

He called especial attention to the beneficial effects which have been obtained from the administration of thyroid extract in myxedema. It has been shown that the patients can be cured after as long a time as even fourteen years, but that the maintenance of health can be secured only by a continuation of the remedy during the rest of the life of the individual. In support of these statements, reference was made at some length to the remarkable results reported with the treatment by Murphy, in that patients were not only restored to apparent health, but were fitted for such arduous tasks as mountain climbing. Cases were also reported which had come under the observation of the speaker. He showed that not only could myxedema be cured, but that the fearful lack of skeletal development could be overcome in these cases, and the mental condition be very materially improved at the same time by administration of thyroid extracts. The radiograph has been used to determine skeletal growth with reference to prognosis in these cases. It is noteworthy also that a relative softening of bone has been observed to follow what was believed to be an over-dosage with thyroid extract. It is justifiable to conclude that the treatment with thyroid extract holds forth every promise of a child's development, in congenital cases, when the treatment is commenced early and persistently continued.

Goiter.—Turning to the other morbid conditions, the speaker remarked that the benefit obtained from the administration of thyroid extract in goiter has not been satisfactorily explained. The benefit consists in the retrogression of the goiter, through recession of the hyperplastic tissue. Kocher attributes the benefit to a shrinkage of the parenchymatous tissue. Complete disappearance of the tumor has been rarely observed. Reports of permanent cures have not been sufficiently numerous to allow of positive statements. Recurrence after discontinuence of the treatment has been observed, and it is probable that a prolongation of the treatment is also necessary in this condition.

The speaker then referred to the literature of the subject. From it he concluded that varying, although almost uniformly beneficial effects, were obtained from thyroid treatment in all forms of goiter. Finally, he remarked that thyroid treatment has been found to be beneficial in quite a number of conditions in which perversion of the thyroid function has not been observed. The use of thyroid extracts in various forms of insanity was doubtless based upon the power of the agent to increase metabolism. Bruce believes that its action under these circumstances is a complex one. First, the fever which is induced is often beneficial; and second, the thyroid apparently supplies something which is deficient in the systems of these patients. Allan Starr finds its effects especially beneficial in cases of acute mania occurring about the climacteric period,

Obesity.—The literature of this subject is already very voluminous and the results have been generally favorable. There is a decided increase in the excretion of nitogen following administration of thyroid extracts as compared with that received with the food. It has been shown that there also is an albuminoid waste which should be compensated for by a regulation of the diet. Benefit is also seen in cases due to over indulgence. Loss of weight is greatest during the first days of treatment, varying during subsequent days without apparent cause. Only exceptionally has improvement been long continued.

Cutaneous Diseases.—The expectations from this treatment in cutaneous affections have not been realized. Only in psoriasis has any marked benefit been derived from it, and even in this affection the results have not been as great as were anticipated.

The Adrenals.—Modern literature strongly indicates that the adrenals are functionally active glands. One view is that the function is excretory; the other, that it is secretory. The conclusion of various observers seems to be that a substance is produced which is capable of neutralizing the effects of certain products of metabolism, or of bacterial activity. The result of the reosorption of the secretion of the adrenals is the stimulation of the vagi and other nerves of the sympathetic system, thus stimulating respiration. Other observers have concluded that the action is directly on the muscles, without the intervention of nervous mechanism. The employment of adrenal extract has been advocated in cases in which the function of these glands has been supposed to be deficient. In Addison's disease, for example, the speaker had seen marked benefit from this treatment. One case of Graves' disease has been reported in which the treatment was beneficial. In some of the cases of Addison's disease in which benefit had been obtained relapse and death afterward occurs. In cases of atrophy of these glands he thought it is apparent that most benefit would be obtained from treatment with extracts of the glands.

He then made brief reference to the treatment with extracts of the thymus gland and pituitary body, and reported some experiments which he had made in his hospital wards in cases of apyretic phthisis. His conclusion is that it is not a stimulant of nutritive processes in general. Only a few symptoms were ameliorated. He suggested that the stimulation of the heart muscle, or the walls of the blood-vessels which had been observed after the administration of the extracts of adrenals indicated their use in cases in which the functions of these organs are impaired. Their action is believed to be beneficial in cases of heart failure, but further study is necessary to determine their true therapeutic value. The action is not unfavorably influenced by gastric digestion, and comparatively large doses may be administered, as much as 45 grains daily, for very long periods without injurious effects.

DR. JAMES J. PUTNAM of Boston then read a paper in continuance of the discussion. He took a somewhat less extensive view of the subject than his predecessors, holding that the only affection which we can as yet positively assert to be of thyroid origin is the myxedema cachexia. It is even doubted whether true endemic cretinism should be included as a thyroid affection. He then described the peculiarities which characterize the cretin. Intermediate forms of the disease occur, he said, and the differences of type are claimed to be due to the fact that the cretin is degenerate as well as myxedematous, in consequence of morbid in-breeding. At all events, it is noteworthy that true cretinism is not benefited by thyroid treatment to anything like the same extent as so-called sporadic cretinism.

It is still a question how far in the direction of what is ordinarily called "health" we ought to extend our conception of myxedema, and it is probable that some of the changes commonly attributed to old age are a result of lack of thyroid secretion. Horsley suggests that some of the symptoms of Graves' disease, especially the dyspnea, may be due to a lack of certain constituents of this secretion. When one considers that the structure of the thyroid does not provide for the pouring out of a definite quantity of secretion, that half the gland may be cut away, and that at autopsies it is often found atrophied or hypertrophied, the conviction forces itself upon the mind that an exact balance between thyroidal and antithyroidal substances and tendencies cannot at every given moment exist, and that leanings toward thyroidal excess or of thyroidal deficiency must be present during what seem to be normal states.

Reference was then made to the discussion of the subject of obesity in its relation to thyroid treatment at the Congress of German Physicians at Wiesbaden last summer, when Spitzer pointed out the fact that a sharp distinction should be made between the obesity which is due to food, mode of life, etc., and that which is due to metabolic activity. Ewald has not, however, found this distinction tenable in practice.

Referring to the complex series of symptoms which result from castration, he stated that it is conceivable that eunuchism might be benefited by following the line of treatment for myxedema and giving testicular extracts, and he was surprised that it had not been tried. It would, however, be hard to believe that the same treatment would work so satisfactorily in infantilism.

The Congress then adjourned to the library of the Army Medical Museum to participate in the ceremonies of unveiling the statue erected by the American Surgical Association and the Alumni Association of the Jefferson Medical College in honor of the late Professor Samuel D. Gross.

The exercises were conducted by the American Surgical Association, Dr. J. Collins Warren of Boston, chairman, acting as master of ceremonies. Prayer was first offered by the Rev. B. L. Whitman, President of the Columbian University.

The presentation of the statue to the United States Government was then made in an address by DR. CLAUDIUS H. MASTIN of Mobile, Ala. He first referred briefly to the high character of the Association which presented the statue. They had come together to honor one of their distinguished members who is now dead, and to show their appreciation of what he had done. His life and character were such as are worthy of the emulation of everyone. Born of German parentage, he had acquired those sterling qualities of head and heart which characterize the race from which he sprang—qualities which are essential to great deeds and invaluable in the contest for the survival of the fittest. We find him a poor boy, without the prestige of name or the influence of family or fortune, of studious habits, ambitious, struggling and toiling along in the paths of a young practitioner of medicine. We know how he surmounted obstacle after obstacle. Adversity came and was thrown aside. Nothing daunted, he pressed on to a higher career. Ere he had reached the meridian of life he had become a master in surgery. Endowed by Nature with the strong intellect which he had fully cultivated, he dedicated it to the relief of human suffering and thereby lengthened the span of human life. He reached the highest position ever attained by an American physician. He was fearless, and withal, without arrogance, he was charitable. He was crowned with the highest degrees of almost every foreign university. He had added to literature by exhaustive research. A voluminous writer, he was the author of many books which, by translation into various languages, have become standard the world over, wherever the art of surgery is known, or wherever Hippocratic medicine is practised. "Full of years, full of honor, beloved at home and abroad, he rounded up his great career and rested from his labors on the 6th day of May, 1884. Such is the outline of a life which in the prodigality of Nature, was not intended for any age, but for all time, a life of which we can truly say '*Finis coronat opus.*'"

The speaker then referred briefly to the origin, work, and completion of the movement which had terminated in this presentation of the statue to the people of the United States.

BRIGADIER-GENERAL GEORGE M. STERNBERG, Surgeon-General U. S. A., in accepting the statue for the Government, remarked that it was a pleasing duty which had been conferred upon him to accept, in the name of the people of the United States, this mark of honor and respect bestowed upon the memory of one who had been so honored and so beloved. He had not come to pronounce a eulogy upon the distinguished Gross: this honor had been conferred upon another better able and qualified by long association with the late distinguished surgeon for the task. He referred to the vast contributions which he had made to the literature of surgery, and said that it was fitting that the statue had been placed so near to the Army Medical Museum, in the library of which so much of his literary work had been done. After dwelling upon the advances that have been made in surgical practice in recent years, and the pleasure that a knowledge of these advances would have given Dr. Gross, the speaker said that he felt justified in conveying to the donors of the statue the thanks of the entire medical profession.

DR. WILLIAM W. KEEN of Philadelphia, successor to the Chair of Surgery in Jefferson Medical College, then delivered the address of the occasion, which consisted in a brief narration of the life, history, and achievements of Professor Gross. (See page 591.)

AMERICAN SURGICAL ASSOCIATION.

(Continued from page 603.)

SECOND DAY—MAY 5TH.

DR. DEFOREST WILLARD of Philadelphia showed and explained a large number of photographs.

DR. EDMOND SOUCHON of New Orleans read a paper, entitled

THE OPERATIVE TREATMENT OF IRREDUCIBLE DISLOCATIONS OF THE SHOULDER, RECENT OR OLD, SIMPLE OR COMPLICATED.

The speaker considered all the forms and varieties of irreducible dislocation of the shoulder, and studied to determine the operation which should be performed for each variety, the difficulties and complications after the operation, the immediate results, the remote results, and formulated conclusions as to the advantages or disadvantages of each. The study is based on one hundred and forty cases operated upon. The profound silence of the text-books and also of special books on dislocations in regard to this most important subject renders this study most imperative and timely.

All irreducible dislocations, recent, simple, or complicated with fracture, that were operated upon by reduction or resection have given good results, with one exception, in which death occurred, and did not seem to be due to the operation alone, but to a complication of unusually severe shock.

Irreducible dislocations, old, simple, and forward, operated upon by resection through an anterior incision, are the most frequent, fifty-six cases against thirty-three by arthrotomy and reduction. Remote results show a great mortality percentage in resections from injuries to the vessels, but this is avoidable with special care. The fatalities in reduction have been due to sepsis, now preventable. The disadvantage of reductions is necrosis, calling later for sequestratomies and resections. This is probably due to the greater dissections and denudations of the head and surgical neck necessary for reduction than to simple resection of the head. Reduction is the more desirable operation of the two because it preserves the head and all the movements depending thereupon, but the necrotic consequences are serious drawbacks, as is also the ankylosis which sometimes follows the reduction. It should not be resorted to unless it can be easily accomplished without too extensive dissections although it may be necessary to use hooks, levers, and some curetting of the cup, as the cases reported show. The duration of the dislocation is immaterial; it is the condition of the parts that is all important. Recent irreducible dislocations have been as much, if not more, troublesome than dislocations of long standing.

The anterior incision is the route of selection in all forward dislocations; almost all forward cases operated upon by the axillary route and the posterior incision have been unfavorable. Cases reported as operated upon by subcutaneous section of fibrous bands, of tendons, of muscles, and by osteotomy, have given good results, but their number is as yet limited. It seems extraordinary that surgeons have not employed these methods oftener; perhaps they have, but, having failed, have not reported the cases. Considering the extent and the density of the tissues binding down the head and surgical neck to the surrounding parts, reported by operators, it is a wonder that these methods should succeed except in unusually loose cases.

Irreducible dislocations, old and downward, four in number, have all been treated by the axillary incision with resection, *i. e.*, removal of the fractured head found more or less loose in the axilla, with favorable termination. In one case, however, the head was "pegged back" and reduced, with a good result. One downward dislocation (Després') was treated by osteoclasis, but it was a failure, no false joint forming. Yet there are cases on record of forward dislocation in which the bone was fractured near the head or through the surgical neck during the efforts at reduction, and which yielded a fair result.

Irreducible dislocations, old and backward, in the adult, have been reported twice. They were operated upon by resection, with a very ordinary result.

Irreducible dislocations, old, upward, and operated upon, have not been recorded.

Irreducible dislocations, congenital, have been operated upon several times; they were old, backward dislocations. Two cases were operated upon by reduction; one patient died, the other had to have sequestra removed, but eventually recovered. Three cases were operated upon by resection, two with good results; in the third the result is not given.

Irreducible old dislocations in young subjects or in old subjects were duly considered by the author; also, old dislocations double, *i. e.*, of both shoulders; as well as spontaneous or pathologic and paralytic irreducible old dislocations.

The forms and varieties due to complications accompanying irreducible old dislocations were fully treated and also the forms and varieties due to relapses or recurrences and to the sequels of the operations performed for irreducible dislocations, old, simple, or complicated.

DISCUSSION.

DR. J. EWING MEARS of Philadelphia, referring to Dr. Souchon's paper, advised that the word "irreducible" should be dropped and the word "unreduced" substituted. The word irreducible is a term which can be applied when efforts at reduction are limited to manipulation, while the word unreduced would refer to dislocations which cannot be reduced even by operative procedures. He suggested that some rule should be laid down as to when a dislocation should be considered acute and when chronic. In all cases of recent dislocation of the shoulder which cannot be reduced by manipulation, and operation is considered advisable, he recommended an incision through the deltoid muscle as being probably the best method. He considered that disability and pain were the two indications for operative interference in old dislocations, and mentioned that he had seen cases of old unreduced dislocations in which as much freedom of movement had been accomplished as was usual in excision of the head of the bone without any bad effects. In some old cases of dislocation he considered massage as being advisable before resorting to operation. With regard to the relief of pain in these cases, he thought any operation that would relieve pressure should be performed, and that that was a question that could hardly be discussed. He referred to an operation performed by himself in 1886 in which he did a subcutaneous section of the neck of the humerus, in which the object was to form a false joint. Although the operation was successful as far as the relief of pain was concerned, upon the death of the patient one year later, examination showed that a false joint had not been formed, but union had taken place at an obtuse angle in such a manner as to pull the head of the bone off the axillary plexus. The tissues around the joint had been stretched to such an extent as to permit the head of the bone to return almost to the glenoid cavity.

DR. JOSEPH RANSOHOFF of Cincinnati considered that operative treatment in uncomplicated dislocations of the shoulder of recent occurrence were so readily reducible under anesthesia by manipulation, that operative treatment very rarely came into the question, and that unreduced dislocations of long standing, as far as treatment is concerned, must be entirely determined by the degree of disability entailed. Where this is slight the patient is enabled to gain a livelihood, and pressure symptoms are absent, particularly if the dislocation is one of more than two or three months' standing, the advisability of operative interference must be questioned. But pressure upon the vascular, or nerve trunks was a positive indication for operative interference. The operations suggested and practised for irreducible dislocation of the shoulder are (*a*) subcutaneous division of the adhesions, (*b*) subcutaneous osteotomy of the neck of the humerus, (*c*) arthrotomy, and (*d*) resection. The French surgeons alone advocate the first-named; however, the last two are most frequently indicated. In old cases, even where reduction is accomplished, there remains where the head had been situated a large cavity bounded by firm fibrous walls and often lined with an imperfect serosa which closes with difficulty and affords a ready nidus for infection. The earlier interference is practised the better are the final results. The immediate fatality following arthrotomy is very considerable. The present status of the question of operative interference in shoulder luxations may be summarized as follows:

(*a*) Immediate operative interference is indicated when the ordinary methods by manipulation under anesthesia have failed. (*b*) In irreducible dislocations, operations should not be delayed until irremediable changes have taken place in the capsule and about the humeral head. In comparatively recent cases arthrotomy offers the best results. (*c*) In old-standing cases the conditions found must determine the choice between arthrotomy and resection. (*d*) In unrecognized dislocations of long standing, a year or over, only grave compression symptoms should be recognized as indications for interference. (*e*) Special attention should be given to the prevention of sepsis, since in a very large proportion of cases recorded sepsis has been either the cause of death, or by the destruction of the humeral head, or obliteration of the joint cavity, has frustrated the very object of the operation.

DR. J. J. OWENS of Chicago stated that his experience with cases of this kind was limited to three, the first one of which was of the subcoracoid variety; in this, attempts at reduction were unsuccessful, and it was necessary to cut down through the deltoid muscle into the joint. Caries, suppuration, and necrosis set in, and finally resection had to be done. Since this case, he had seen one which proved to be a dislocation of seven or eight-weeks' standing, although it was said to be a fracture. In this instance an incision was made through the deltoid muscle, which was enlarged with a probe-pointed bistoury, but it was still impossible to reduce it. The subscapular tendon was then divided, and although nothing could be found which seemed to be holding the bone, it was still impossible to reduce it, and a resection had to be done, which was followed by excellent results. The third case was one of dislocation, which had been overlooked and mistaken for a fracture, and in this case also manipulation failed. In performing Kocher's method of rotation of the arm outward, the upper end of the bone gave way. Its position was improved at once, and the pain finally disappeared. In order to prevent union, and to make a false joint, if possible, the bone was moved every day. Movement increased, and considerable usefulness was secured, so that the accidental result proved satisfactory.

DR. JOHN B. ROBERTS of Philadelphia referred to one case in which, in attempting reduction, much bruising of the soft parts resulted, and it was necessary to postpone operative interference until this condition improved. Later he discovered that he had put the head of the bone on the brachial plexus, so that the patient was worse off than ever, and resection was necessary. The patient succumbed from shock and hemorrhage within twenty hours.

DR. L. MCLANE TIFFANY of Baltimore saw no reason why cases of dislocation of the shoulder joint should be considered in a different manner from those of any other joint, and considered free opening a proper procedure. As to the time when a joint should be considered irreducible, no hard and fast rule could be laid down as the variations are too great. After the head of a bone is firmly fixed in its abnormal position, resection is the best thing to do, as a painless and useful arm will invariably result.

DR. SOUCHON closed the discussion of the paper, and referred to the fact that even Dr. Kocher had fractured cases in his attempts to reduce dislocations, and one patient had died. He spoke against waiting too long before operating on these cases on account of the adhesions which so often occur. He considered the deltoid muscle the all-important factor in the operation, and particularly on account of the division of the filaments of the circumflex nerve and the resulting paralysis. He laid great stress upon the after-treatment, and particularly as to when it should be commenced, stating that this must be decided according to the case.

DR. E. H. BRADFORD of Boston read a paper on

TENDON ANASTOMOSIS.

Referring to the transplantation of tendons and tenoplastic surgery, he spoke of the good results which have followed the transference of one of the perinei muscles from one side of the limb and attaching it to a paralyzed muscle on the opposite side to correct a deformity of the foot resulting from such paralysis. He also referred to the union of the anterior tibial and extensor longus pollicis muscles, to shortening the extensor tendons of the foot and also of the Achilles tendon, as well as transplantation of the sartorius tendon. In cases of spastic paralysis, he advocated lengthening of tendons and muscular fasciæ in the popliteal space, in the groin, in the forearm, and in the hand. He also showed diagramatically a method of splitting the patella, of shortening a lengthened ligamentum patella, and shortening a relaxed capsule. He stated that before transplanting a muscle one should prove by electricity that the muscle itself is alive and healthy, and strong enough to do the work. He stated that excellent results have followed these operations, and demonstrated with photographs and drawings cases before and after operation.

DR. JOHN B. ROBERTS of Philadelphia referred to a case in which paralysis of the extensor of the fingers existed, and in which a laceration of the common extensor was found. Upon attaching the piece of tendon of this muscle to the thumb, the hand was rendered practically as good as ever.

DR. DEFOREST WILLARD of Philadelphia stated that in a number of cases in which he had employed similar methods much improvement had followed.

DR. BRADFORD closed the discussion by referring to a case of Dr. Dawbarn's in which the insertion of the ligamentum patella was transferred by chiseling off the tubercle to which it is attached, crushing a portion of the tibia, and inserting the tubercle there.

DR. JOHN B. ROBERTS of Philadelphia read a paper, entitled

THE SURGICAL TREATMENT OF SUPPURATIVE PERICARDITIS.

The author advocated, as he had since 1876, the treatment of pericardial effusions in the same manner as pleural effusions, and stated that parcentesis was insufficient to cure suppurative pericarditis. Incision and drainage were essential and should be adopted as soon as the diagnosis of pus in the pericardium was made. The diagnosis of the purulent character of the effusion was only determinable by exploratory puncture. This should be done at the upper part of the left xiphoid fossa close to the top of the angle between the seventh cartilage and the xiphoid cartilage. Pericardiotomy should then be done after resection of the fourth and fifth costal cartilage in the manner described by the author. The operation was believed to be novel in some of its details, though others have recommended and operated upon by various forms of resection. This method was devised to avoid injury of the left pleura, which is nearly always a complication in the ordinary methods of puncturing or incising the pericardium. As a rule, empyema is liable to occur as a sequel of pericardio-puncture or incision in suppurative pericarditis. The prognosis is good in pericardiotomy for pyopericardium. In a table of twenty-six collected cases, ten recoveries and sixteen deaths were shown. This gave a percentage of recovery of 38.44 per cent. Of the fatal cases, at least nine were septic, and all the others which died had complicating lesions, such as pleuritis, pulmonary, cardiac, or renal lesions. The operation devised by Dr. Roberts consisted in raising a trap-door of the fourth and fifth costal cartilages and connecting soft parts and using the tissues of the third interspace as a hinge. The internal mammary vessels and left pleura are thus exposed and pushed to the left.

DR. CHARLES B. PORTER of Boston discussed this paper and gave the history of one case which was operated on in a manner similar to that recommended by Dr. Roberts. The result in this case was that after convalescence was established the patient was in excellent health and was able to ride a bicycle a considerable distance without fatigue. With regard to the indications for the operation, it may be said with confidence that the percentage of recoveries after its performance warrants the statement that it is indicated in all cases of purulent pericarditis. The author then referred at some length to the surgical anatomy of the pericardium and said that the ideal operation was as far as possible (1) to avoid opening the pleural cavity, (2) to open the pericardium opposite the point where drainage will remain good after the sac has contracted, and (3) to secure permanent and free drainage. He then detailed the steps of the operation and referred to a number of cases of reported recovery from purulent pericarditis treated by incision and drainage. A number of charts and diagrams accompanied the paper.

Dr. J. McFadden Gaston of Atlanta, Ga., discussed this paper and stated that discussion on this subject have laterly inclined to more vigorous measures of internal treatment before using any means of mechanical evacuation. The conditions were more urgent in pericardial effusions than in pleural effusions. It may be said that aspiration is not applicable to purulent collections in the pericardium and should be limited to serous effusions. The author then referred to a number of medical publications in which references were made to this subject and stated that the only means available for testing the character of the contents of the pericardium is the aspirator or the hypodermic syringe. If serum is found, it should be evacuated and medication begun with such agents as have been found most efficacious in serous pleural effusions, but if a purulent collection is already present, the case required incision and drainage without delay.

Dr. Roberts closed the discussion by stating that he would add the cases referred to by the gentlemen to the statistics in his paper.

Dr. S. H. Weeks of Portland, Me., read a paper, entitled

REPORT OF A CASE OF REMOVAL OF THE GASSERIAN GANGLION.

The author gave the history of the case as related by the patient himself, and the only apparent cause for the neuralgia seemed to be excessive mental work. After describing at length the details of the operation, the speaker stated that the only marked symptom remaining is inability to call up or speak certain names. There seems to be a limited amount of aphasia, which has been present from the first, but which is gradually disappearing.

Dr. G. R. Fowler of Brooklyn stated that he knew the patient personally, and could vouch for his intense suffering previous to the operation.

He also reported that the two cases of ligature of the common carotid and of the external carotid, performed to starve the Gasserian ganglion which he reported to the Society last year have remained free from a return of the disease.

THIRD DAY—MAY 6TH.

Dr. Dudley P. Allen of Cleveland, Ohio, read a paper on

THE ORIGIN OF APPENDICITIS.

Dr. L. M. Tiffany of Baltimore read a paper on

INTRACRANIAL SURGERY,

after which the society went into executive session and elected the following officers: President, Dr. S. F. Pewitt, St. Louis, Mo.; Vice-Presidents, Dr. J. McFadden Gaston, Atlanta, Ga., Dr. M. H. Richardson, Boston; Secretary, Dr. H. L. Burrell, Boston; Treasurer, Dr. G. R. Fowler, Brooklyn.

The next meeting of the Association will occur at New Orleans, April 20, 1898.

ASSOCIATION OF AMERICAN PHYSICIANS.

(Continued from page 606.)

SECOND DAY—MAY 5TH.

A CASE OF PANCREATITIS FOLLOWED BY THE FORMATION OF A CYST.

Read by Dr. A. McPhedran of Toronto. A case was detailed in which there was a history of recurrent attacks of colic for about five years, then a sudden effusion into the omental bursa, which was evacuated; after that a large cyst of the pancreas formed. This was opened and drained, and the case recovered with the persistence of a sinus. The cyst was of true pancreatic origin, but contained no pancreatic secretion. Their precise nature is uncertain. The moderation of the attacks of colic consequent upon the formation of the cyst, and their complete relief by the evacution of the cystic contents, pointed to some mechanical irritation caused either by cicatricial contracture or external pressure.

ANGINA PECTORIS; ITS RELATION TO DILATATION OF THE HEART,

was the title of a paper by Dr. J. H. Musser of Philadelphia. Patients who have had an attack or attacks of angina pectoris are relieved of the paroxysms if dilatation of the heart supervenes. Often, if dilatation persists, the patient may live for years and no other paroxysm occur. It seems the pain, as long ago pointed out, is due in large part to the stretching of a tense ventricle from intracardiac pressure. Such stretching is not so likely to occur in dilatation because of "safety-valve action" in the heart. This appears to explain the infrequency of angina in the young; in mitral valvulitis with regurgitation; in women, possibly; and in the occupants of infirmaries and hospitals. In the latter class the vigor of the heart muscle is lessened from lack of food, etc. Certainly it is not because of the absence of atheroma of the coronary arteries, for endarteritis is very prevalent among senile, usually alcoholic, perhaps syphilitic inmates of the hospitals and almshouses.

If the contention is true, the diagnosis, prognosis, and the treatment, tentatively admitted, is influenced as follows: The diagnosis, in that angina-like paroxysms in dilatation of the heart are probably not due to true angina pectoris; the prognosis, in that, if, as rarely happens, an undoubted attack of angina occurs in a case of valvulitis with dilatation, and even failing compensation, the patient on the one hand is not likely to perish from the angina, because of the safety-valve, while, on the other hand, it indicates that there is sufficient strong muscle fiber to insure cardiac recuperation. Further, if a patient subject to attacks of angina presents signs and symptoms of dilatation, the angina will disappear, or at least never be so severe as to terminate fatally.

That the pain is due to intracardiac pressure is more possible because of the presence of dilatation of the heart in angina *sine dolore*. Attention is called to a similar association of pain with increased tension of the globe, in acute glaucoma.

DISCUSSION.

Dr. Wharton Sinkler of Philadelphia questioned the statement of the author that the pain in angina is due to intraventricular pressure, for in pseudo-angina the pain is just as acute as in the organic disease. He gave the history of a case of pseudo-angina in a hysterical girl in which morphia and other drugs failed to give relief.

DR. H. C. WOOD of Philadelphia also questioned the dependence of anginal pain upon intraventricular pressure. In this connection it is interesting to note the effect of nitrite of amyl. As to digitalis in this condition, if there be an insufficiency of the mitral valve there might be intense pain from its administration. It is more likely, he thought, that the pain is due to distention of the auricle. There is another thought suggested. If the theory of Dr. Musser be correct we should be able to relieve the symptoms by the administration of aconite, for it is well known that if we give enough aconite we would do away with intraventricular pressure altogether. The problem is to do away with the pain of the patient without, at the same time, doing away with the patient, and this is best accomplished by the use of digitalis.

DR. EDWARD G. JANEWAY of New York gave the history of the sudden onset of an attack of angina in a man who never before had the disease. The pain, in this case, went down the right arm instead of the left. The man had pericarditis, and Dr. Janeway had suggested that the attack might have been due to the plugging of the coronary artery by a thrombus. The man lived a week after the attack, and his pulse came down to 72 to the minute. He said he felt well enough to get up, and did get up, with fatal results. At the autopsy it was found that there was a thrombosis of both coronary arteries, a rupture of the ventricle, a drawing away of the papillary muscles. It seemed probable that the first anginal symptom was coincident with the thrombosis of the right coronary artery. It was interesting that the pain was on the right side instead of the left, corresponding with the thrombosis of the coronary artery.

DR. CARY said he would like to raise another question, and that was in regard to the true cause of glaucoma. That there was distention of the globe was certain, but that this distention produced blindness was open to question. The cause of the secretion was the real cause of the blindness, and the true cause of the glaucoma. The same thing could be said of angina; that distention of the ventricle gives rise to pain is true, but there were other causes of the anginal symptoms.

DR. J. H. MUSSER said he simply wished to lay stress upon the fact that the dilatation of the heart furnished a safety-valve action for the relief of the pain. Where there was not this dilatation the pain was continuous, and angina pectoris is usually seen in relatively strong and robust men, with strong hearts which do not yield to this intraventricular pressure. There had been no attempt to explain all the causes of angina, because they were not yet all known, but simply to call attention to the relative infrequency of angina in persons with weak or dilated hearts.

DR. J. P. KINNICUTT of New York was of the opinion that thrombosis of the coronary artery was frequently the cause or the paroxysms of anginal pain. The mere stretching of the arterial walls by the embolus was sufficient to account for the pain, for all knew the exquisite pain caused by an embolism in a systemic artery.

PERICARDITIS—SOME POINTS IN ITS DIAGNOSIS AND TREATMENT.

This paper was read by DR. F. C. SHATTUCK of Boston. He pointed out that pericarditis is frequently overlooked because (1) it is not sought for; (2) it might not give rise to symptoms if dry, or if the effusion were small; (3) it is often associated with changes in the lungs and pleuræ which might mask its presence. The shape of the dull area was not, in his experience, pyriform or triangular, but similar to that of general enlargement of the heart. In nearly all his cases he had tapped the pericardium; the point of election for tapping is in the fifth interspace, one or two inches to the left of the left nipple. His best results, in seven operations, had been obtained from this point—forty-six ounces in one case and sixteen in another. He was skeptical of the value of general treatment, and never resorted to any except rest. Alcohol might be useful, but blisters should be avoided. He sometimes used the ice pack when it was grateful to his patients. The answer of Sir William Gull to one of his assistants who sought to apologize for not recognizing a case of pericarditis might be borne in mind by those who were tempted to use energetic remedies in this disease. He replied that it was just as well that he had overlooked it, for if he had discovered it he might have treated it. He realized the serious nature of the operation, but he had never regretted having tapped the pericardium, but he had regretted not having done so. He believed he had saved two lives by the operation, and he thought he might have saved another case by tapping. No hard and fast rules could be laid down for the time of operating or as to the point of election. He had once tapped the pericardium at the costoxiphoid angle in a cadaver, and from his success in this he felt tempted to select the same point in a living patient. In one of his cases the tapping was only temporarily successful, and he had had his surgical colleague open the pericardial sac. This was the only case of this operation at the Massachusetts General Hospital.

DISCUSSION.

DR. JAS. T. WHITTAKER said that the condition is very rarely recognized during life. The symptoms are very obscure, and often unrecognizable. The friction sound is a transitory symptom and hard to demonstrate. He was inclined to give a more important place to tuberculosis as a condition than Dr. Shattuck had assigned to it. At least two-thirds of all cases were due to this cause. The area of dulness can often be more easily mapped out by combined auscultation and percussion. With the patient on his back and a Camman stethoscope in the ears, and lightly resting on the patient's breast, the percussion sounds are much intensified. The operation is not a particularly dangerous one. He had been doing it for many years, and had never seen any bad results. It is even easy, by the simple introduction of the instrument, to feel the pulsations of the heart. In one instance he had attempted to tap the pericardium, and although he got the instrument into the sac, and although he was confident of the existence of effusion, no fluid came through the canula. On withdrawing the instrument he found it plugged with a piece of hyaline cartilage. This taught him the necessity of selecting the point of operation with more care.

Dr. H. A. Hare was of opinion that the danger of wounding the heart is much exaggerated. He had arrived at this conclusion from an involuntary experiment on a young man who was suffering from articular rheumatism. He had intense dyspnea and difficult heart action. Dr. Wilson saw the case in consultation, and a diagnosis of pericarditis was made. He was tapped twice, and although no fluid was withdrawn, the boy was wonderfully improved each time. There was no *post-mortem*, but Dr. Hare was convinced from the subsequent history that the case was not one of pericarditis, but that the young man had a normal heart.

Dr. T. M. Rotch thought this case very well illustrated the danger of tapping the pericardium. There is always a great difficulty in making a diagnosis of pericardial effusion. It is almost impossible to make a diagnosis between dilated heart and pericarditis with effusion, by the usual methods. This is easily seen in the *post-mortem* room. The danger of tapping is increased by the possibility of the heart being bound down in malposition by adhesions. As to the point of election, he had tapped a child with pericardial effusion, on the right side of the sternum. Another point in the physical diagnosis of pericarditis with effusion, which is generally overlooked, is that we will find dulness in the back between the angle of the scapula and the spinal column. He had made this discovery ten years ago, but had never published it.

Dr. Norman Bridge said he was surprised that Dr. Shattuck had made no mention of dysphagia in any of his cases, for he had seen it two or three times.

Dr. James Tyson was especially interested in the matter of the outline of the area of dulness. This area was pyriform, while the shape indicated by Dr. Shattuck was the same as in double enlargement of the heart. For the purpose of mapping out these areas the phonendoscope was of special service. As to the use of blisters in the treatment of pericarditis, he did not think they should be allowed to pass out of use; he did not want to be made to give up his blister. He had always had a great horror of tapping the pericardium until he heard Dr. Shattuck's paper. Then he became bold and thought he might try it, but after hearing what Dr. Hare and Dr. Rotch had said he had retired to his first position.

Dr. A. McPhedran was of the opinion that many of the cases diagnosed as pericarditis were, in reality, cases of myocarditis. This was shown in Dr. Shattuck's cases by the fact that some of his tappings were dry, and he believed that if all his cases had gone to autopsy it would have been shown that they were suffering from myocarditis rather than from pericarditis.

Dr. F. H. Williams thought that the use of the X-ray might clear up the uncertainties between pericarditis and enlarged heart.

Dr. Janeway said that the shape of the dull area in pericarditis with effusion was pyramidal, and he was always able to map out this area. He did not consider tapping a serious operation, and had once accidently punctured the right heart and got blood. No harm resulted from the tapping, and when the patient died, shortly afterward, it was seen that the wound in the heart had healed.

Dr. Shattuck, in closing the discussion, and replying to Dr. McPherdan, said he had had only one case in which there had been no fluid in the pericardial sac. It was true that some of his tappings had been dry, but subsequent tappings in the same cases had been productive.

DIAGNOSTIC AND THERAPEUTIC CONSIDERATIONS WITH RESPECT TO CERTAIN AFFECTIONS OF THE UPPER AIR TRACT,

was the title of a paper read by **Dr. Beverly Robinson** of New York. The paper dealt with the utility of the laryngoscope and rhinoscope, and compared the methods of the German and French schools. Numerous examples were cited to show the contrasts between the general practitioner and the specialist in the treatment of diseases of the upper air passages.

NERVOUS DEAFNESS IN DIPHTHERIA.

A case was reported by **Dr. J. C. Wilson** of Philadelphia of follicular tonsillitis in an adult. There had been moderate fever, occipital headache, *tinnitus aurium et cerebri*. On the fourth day dense follicular exudate was observed on the right tonsil, with conjunctivitis, increasing tinnitus, and deafness. An injection of diphtheria antitoxin serum was given, followed in a few hours by total deafness with slight vertigo, and great chemosis. A gradual defervescence occurred, and was completed by the thirteenth day, at which date there was partial paralysis of accommodation, together with paresis of the extensor muscles of the head, persistent tinnitus, slight vertigo, and absolute persistent loss of hearing. The paper also discussed the rarity of the case, its importance, the bearing of the antitoxin injection to the development of the sequelæ, the general subject of sudden nervous deafness in the infections, and the general question of diagnosis, prognosis, and treatment.

DISCUSSION.

Dr. I. E. Atkinson, in speaking of the uncertain and unsatisfactory regulations which required cultures of all suspected cases of diphtheria to be made by the board of health, related the details of a case in which he had made the clinical diagnosis of diphtheria, while the board of health had made three fruitless attempts to find the Klebs-Lœffler bacillus. He contented himself, however, with the philosophic reflection that the case *was* one of diphtheria, despite the failure of the bacteriologic examination, and he had not pressed the matter upon the officials because he was only too glad to be relieved of the unpleasant necessity of placarding the house. When called to see a

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ORIGINAL ARTICLES.

TENDENCIES IN MEDICINE.[1]

BY J. M. DACOSTA, M.D.,
OF PHILADELPHIA.

THE greatest advance of our time— it seems trite to mention it to such an assembly—is the ardent study of the causation of disease. Students have speculated in all ages on the causes of disease; but these have been, for the most part, half-hearted speculations, made so by the feeling of impossibility of reaching a conclusion, or dogmatic assertions that, believed in for a time, soon became of interest only to the curious searchers for fragments on the shelving beach of science. Now, the recognition of minute organisms, their study, their artificial culture and modes of growth, their secretions, their chemical characters, their likes, their antagonisms, have let us into the secrets of another world and are showing us the way in which infective maladies originate and the laws they obey. We are looking for infection in every disease; we are often keenly pursuing it where it probably does not exist; at all events, not in the shape of bacteria, which in our day we accept as a term almost synonymous with infection.

Other than mere bacteriologic work forms a most valuable part of the contribution of the laboratory to the investigation of disease, and in the last decade has placed this investigation on a much higher plane. The microscopic and chemic examinations of the secretions and excretions and of the blood have become our daily duty. The chemic examinations, which, dealing, as they may be made to do, with the constantly varying problems of life in disease, have been temporarily overshadowed by the ardor of bacteriologic research, will, with widening fields, resume their former prominence. The time is indeed at hand in which, without the ready access to a laboratory manned by experts in all these lines, or the association with a trained laboratory assistant, no physician can do his patients, himself, or his science justice.

Closely connected with the laboratory investigation of disease, especially with its chemic investigation, is the study of the effects of the products generated by decomposition of albuminous matter, producing, when developed in the dead body, the substances known as ptomaines, when in the living body, as leucomaines. The recognition of these agents, so frequently poisonous, is explaining many obscure processes, is leading to new and close scrutiny of others and to search after means of neuralizing their toxic influences.

Another of the best results of the achievements of our time is seen in the effacement of the strict division between medicine and surgery, or rather in the recognition that there are no lines separating them, but lines becoming continuous, on which joint action proceeds. We see this in the whole clinical history of appendicitis and its progressive unfolding; the more the medical part is studied and rendered precise, the more exact become the indications for operation and the appreciation of the chances. The same may be said of abscess and of tubercle of the kidney; of the investigations of the character of effusions into pleural, or pericardial, or peritoneal cavity; and of many other well-known conditions that surgeons and physicians are now studying together.

The tendency of our time is to endeavor to overcome disease, and not merely to observe and palliate its ravages. We are going back to the doctrines of our forefathers; abandoned for a time, because, with an expanding knowledge from the study of pathology, the means they possessed were found to be, for the most part, totally inadequate. Thus, there was a period of nihilism and expectancy in therapeutics. But so-called rational expectancy is but a confession of impotency. Now, the tendency is once more aggressive. We are trying directly to choke or to subvert morbid action, and doing this partly through the old, transmitted remedies of former generations, but employed with a better understanding of their real qualities, partly by new agents furnished by chemistry and by constant research in other fields.

One of the most interesting attempts at radical therapeutics is the endeavor to counteract the bacteria of disease by substances that form in the body and which neutralize their toxic products. This antitoxin treatment is brilliant and hopeful, and is being tried in many affections, preeminently in diphtheria, in tetanus, and in erysipelas. It cannot be said that as yet it has led to any great results, though the evidence is decidedly in its favor in diphtheria. It seems scarcely worth while to push it in erysipelas—at least in the erysipelas which the physician sees—for the mortality in this is, under any treatment, very slight. How valuable the antitoxins will prove as preventives remains also to be solved. More productive thus far has been the use of attenuated virus, as, for instance, in Pasteur's treatment of hydrophobia, etc. The effects on tuberculosis must be taken thus far as the expression of hope rather than that of fact. The next decade will prove whether the X-rays, which are making such wonderful additions to diagnosis, will have also their therapeutic triumphs.

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[1] Abstract of the President's address at the Twelfth Annual Meeting of the Association of American Physicians, Washington, D. C., May 5, 1897.

There are, with all these tendences of our day that work for good, some which, whether growing out of them or whether the exaggeration of old hindrances, have to be, in the interest of true science, strenuously guarded against. One that is very evident is the tendency to immediate generalization. The discovery of every new bacterium is supposed to instantly revolutionize the science of medicine, and is announced with all the air of the unexpectedness of genius.

Fixity of opinion in medicine is a virtue, if the mind remain open to proof and be in sympathy with advance; and it is this freshness of mind, joined to good judgment, which will best estimate the true value of the many facts constantly discovered in an advancing science like ours. Clinical medicine, indeed, must continue to be the final court of appeal for the purposes of the practitioner of medicine. Before that court will come and be listened to with sympathetic interest, as eloquent advocates, those who are presenting the claims of special studies. But these must be well supported and judged in their bearing on the whole before new laws are laid down. And we see that the more we investigate and the more we know the more will old questions assume different aspects, the more they will have to be retested; there is no finality—there can be none—in medicine. When the last word is spoken we shall have a perfect science; until then there must remain for us a certain amount of empiricism, especially in treatment.

It would be, indeed, well if in all our professional literature there were something more of the learning of the scholar and the clearness of the literary artist; men who followed the master, Harvey, in other points besides profound and productive research. A few more Watsons and Pagets, Trousseaus and Hyrtls would make knowledge easier to obtain, more constantly with us, forming much more a part of our daily life and application. It is true that if, in our science, we must choose between profound inquiry and its clear enunciation, we shall choose the former. It is a pity, and it is unnecessary, that there should be any occasion for a choice. The French, with their lucidness in scientific matters, set all other nations an example. The countrymen of Goethe, foremost in investigation, following his avowed contemptuous indifference to style, are the greatest sinners against clearness and vivid expression.

One more tendency of the day let me notice, which is not for good, and undoubtedly retards progress. It is the excessive publication of half-knowledge, of doubtful fact, and of loose inquiry. The propensity for authorship is an old disease, but it has assumed a development commensurate with the prodigious development of everything else in the age in which we live. It is harmless in journalism, less so in literature, but positively dangerous in science; for it fills it with immature or false observation, and takes the time of others to remove the obstructions placed in the stream of knowledge. With some, want of sufficient training leads to it and absence of inquiry into what has been already ascertained; in others, it proceeds from a girl-like genius that, in place of letter-writing, pours itself out in medical periodicals, fascinated by penning sentences full of pseudo-scientific commonplace. It is far from being a disease only of the untried or ignorant; famed workers, too, may succumb to it, listening, perhaps, to the entreaties of friendly and sleepless editors. Who knows that it is not, after all, a physiologic function, giving full play to brain-centers in very rare use—centers situated in what Oliver Wendell Holmes has called the idiotic area of the brain.

But whatever the retarding influences, they are not to any extent checking the onward course of medicine. The numerous inquries, the keen experimentation and close research, the general thoughtfulness, are developing a resistless scientific method; resistless because it is true. Medicine is no longer an art founded only upon empirical observation, no longer a purely deductive science; it is also becoming an inductive one. The great body of the community is touched with friendly interest in watching its growth. With the advance of the scientific method special systems are crumbling; future ones are impossible. There can be no more pathies; the general intelligence will prevent it; for educated men are recognizing the broad base on which medicine is resting, and that truth is sought in it by the same means that are used in physics and in the highest development of other sciences. In our midst with all this, conviction is becoming clearer, purpose waxing more resolute. We see, without pang, castles which have crowned rocks being turned into dismantled memories, because we know that something stronger, that will defy all time, will stand ultimately on the old commanding sites. With everyone of us there is a mission to assist the general advance.

PERITYPHLITIS AND APPENDICITIS IN THEIR RELATIONS TO OBSTETRICS AND GYNECOLOGY.[1]

By PAUL F. MUNDÉ, M.D.,
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THE recognition of the true pathology of inflammation of the vermiform appendix is an event of comparatively recent date. Formerly, indeed within twenty years, inflammation of the right iliac or cecal region was known as “perityphlitis,” and supposed to be situated in the neighborhood of the typhlon or cecum, the cause of the disease being the transmission of an infection or irritation from the bowel. The connection of the appendix with the inflammation was not suspected. Hence, in former days, the disease was called perityphlitis, and only within the last ten years or so has the term “appendicitis” been adopted. Although a hybrid word, it expresses the condition of inflammation of the vermiform appendix perfectly, and is scarcely likely to be supplanted by the word “scolecitis” (Greek *σκόλεχ*), recently suggested by Dr. Gerster. The word “appendicitis” has, however, one disadvantage when applied to the disease in the female sex, namely, that it conflicts with the name which might be given to inflammation of the uterine appendages, for which the long and cumbersome word, “salpingo-oophoritis” is now used. However, it is not my object to discuss either appendicitis or perityphlitis in a general manner, but to confine myself to these diseases as they may interest the obstetrician and gynecologist.

That such conditions as perityphlitis and perityphlitic abscess exist, entirely independent of the appendix, I know to be the case, and I shall refer to an instance of it in the course of this paper.

Until quite recently, nearly all, if not all, the cases of appendicitis reported in literature occurred in the male sex, as though the disease was limited to that sex. Of course this was not the case, for the female has a vermiform appendix quite as well as the male, and there is no physiologic, anatomic, or pathologic reason why the appendix should not become inflamed quite as readily in the young or adult female as in the male at any age. But certainly the disease was looked upon as occurring chiefly in the male.

The reason for this apparent immunity in women must undoubtedly be sought in the vast preponderance of inflammatory affections of the uterine appendages, pelvic peritoneum, and pelvic cellular tissue, which so overshadowed the intestinal appendix as to cause diseases of this organ to be overlooked and undervalued. I have no doubt that many of us in past years have failed to recognize more than one appendical exudate and abscess, mistaking it for a pelvic cellulitis or peritonitis on the right side; and the error was never discovered, because in those days the abdomen was not so readily opened as now, and even the autopsy failed to explain the true cause of the general peritonitis from which the patient died. A proper consideration of the exact site of the inflammatory product, whether it descended into the pelvic cavity or was situated in or above the iliac fossa, must easily have settled the question. But the idea of appendicitis did not occur to us then as it does now, any more than formerly a tubal pregnancy, particularly after rupture, was recognized as readily as now, simply because we had not then become accustomed to look for that accident, as is now the practice.

I recollect a case seen by me in 1875 in which a hard, painful mass was found in the right ilio-ovarian region, and which I supposed to be an exudate from pelvic peritonitis or cellulitis. Not until two weeks later, when I was asked to see the patient again and found a fluctuating swelling in the median line halfway between the umbilicus and pubes, aspiration of which showed a thin feculent-smelling discharge, did the true nature of the case—a fecal perityphlitic or appendical abscess—reveal itself.

Some twelve years ago I was called to see a girl of fourteen for an obscure pain in the right iliac region which was supposed by the family physician to depend on disease of the right appendages. I detected a resistance at that point and diagnosed a “perityphlitic abscess,” the temperature and pulse indicating the probable presence of pus. On the night before the day fixed for the operation the abscess broke into the bowel, the pus was discharged per rectum, and the tumor and all the symptoms disappeared. I will mention incidentally that I saw a similar occurrence in a boy some twenty years ago, when I was still attending general practice. I failed to make the diagnosis until after the rupture, as the tumor developed in the median line and resembled the distended urinary bladder. But the peculiar odor of the fluid discharged per rectum, the complete subsidence of the swelling and rapid recovery of the boy, made such an impression upon me that I at once recognized the similarity of the two cases when the discharge voided by the girl was shown me. In both of these cases an operation was happily forestalled by the unexpected bursting of the abscess into some portion of the intestinal canal.

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[1] Read at the Twenty-second Annual Meeting of the American Gynecological Society, Washington, D. C., May 4–6, 1897.

I had almost forgotten these two cases when about five years ago a girl fourteen years of age was brought to my office for a foul-smelling discharge from the vagina which I found to proceed from an opening in the right vaginal wall. The hymeneal ring had been so dilated by the presence of the abscess that a vaginal examination was easy. On probing the abscess it was found to extend up to the crest of the right ilium, where the history stated the pain originally began. Free incision, irrigation, and drainage, resulted in a closure of the abscess. A short time later two instances of appendical abscess, one complicated by abortion, the other by a small ovarian tumor, which completely masked the presence of the abscess (the pain and fever being attributed to a twisted ovarian pedicle), occurred in my service at Mt. Sinai Hospital. Although I was much interested in these cases I did not report them, as I presumed they were not uncommon in general practice, and as I did not then appreciate their close relation to gynecology and obstetrics.

When, however, in September, 1894, a case of appendical abscess during the eighth month of pregnancy, which caused the death of the child and premature delivery through the high temperature (104° F.) produced by the disease, was seen by me in consultation and reported in the *Medical Record* of December 1, 1894, the profession became aroused to the importance of this subject, and reports of similar cases began to appear in the medical journals. One of the earliest articles is by Dr. F. W. Thomason, of Huntsville, Texas (*Medical Record*, September 21, 1895), in which he refers to my case of September, 1894, as "now famous in medical literature." The most complete paper on the subject is by Dr. Robert Abrahams of New York, which he read before the New York County Medical Association on November 16, 1896, and published in the *Americal Journal of Obstetrics* for February, 1897. He limits his remarks to appendicitis complicating pregnancy, and reports seventeen cases observed by him, Wiggin, Gerster, McArthur, S. C. Harrison, Thomason, Crutcher, Hirst, Willy Meyer, and myself.

A very excellent article by H. N. Vineberg on "Acute Catarrhal Salpingitis; its Resemblance to Appendicitis; Differential Diagnosis and Treatment," appeared in the *Medical Record* for November 21, 1896. Of late, reports of cases mentioned in discussions at the various medical societies, in which appendicitis was complicated with inflammatory disease of the right appendages, or in which an inflamed and suppurating tube or ovary simulated an appendical abscess, are increasing.

I myself have had some additional experience, a report of which, with the exception of my most recent cases, will be found in the *Medical Record* for March 23 and October 26, 1895. In these communications I refer chiefly to the occurrence of appendicitis during pregnancy and labor, and call attention to five points in the pathology, diagnosis, and treatment of the disease at these times, namely:

1. The possibility of the occurrence of appendical inflammation, either as a new disease, or as a recurrence of a previous attack at any time during pregnancy, or even during labor and the puerperal state. Indeed, there is no reason whatever why a woman at these times should be more safe from the disease than at any other time.

2. The induction of abortion or premature labor by the acute appendicitis, either in consequence of the local irritation or through the fatal effect on the ovum of the general hyperpyrexia.

3. The difficulty of diagnosis of the true nature of the case, especially when the pain in the right iliac region is masked by the natural labor pains, or the attack occurs after delivery, and the high temperature may be mistaken for that of puerperal septic infection.

4. The necessity for prompt surgical interference, whether the attack occur during labor or the puerperal state.

5. The danger of a greater mortality owing to the possible postponement of the operation in consequence of the difficult diagnosis, or to the risk of genital infection.

In my first reported case I delayed operation until four days after delivery, as the urgent symptoms abated and there appeared to be no immediate danger. Fortunately, the abscess was separated from the general peritoneal cavity by firm adhesions. (The lady has since had a normal delivery at term.) In future I would advise an early operation rather than take the chances of an intraperitoneal rupture of the abscess. I think the danger of a possible septic puerperal infection from the opened appendical abscess far less serious (since infection can be guarded against by careful antisepsis) than that incurred by the always imminent rupture of the abscess and the resulting general peritonitis. In fact, I would treat the case like any other appendicitis, without reference to the existence of pregnancy, labor, or the puerperal state.

I am aware that a number of cases of appendicitis recover without suppuration and without operation. Dr. Thomason's case was such a one. And I must therefore leave the indication for operative interference to the judgment of the medical attendant in the case. But when the pain in the right iliac region is severe, the pulse is rapid and small, and the abdomen tympanitic and tense, no matter whether the temperature is high or not, I believe the safest plan is a speedy incision and evacuation of the pus, if there is any, or, at least, the removal of the appendix. If, in addition to the above symptoms, there be bilious vomiting, and particularly if there be resistance, dulness, or a well-defined swelling in the right iliac fossa, the operation should be at once performed.

If labor is in progress, there should be even less delay than usual in operating when an abscess is suspected, since the uterine contractions may mechanically produce traction on the appendical adhesions and a consequent rupture of the abscess. This seems to have taken place in the case reported by me in the *Medical Record* for October 26, 1895, where there had been a number of previous attacks of pain in the right side several years before, and the acute symptoms of the attack in which I saw her came on a few hours after delivery.

The difficulty of diagnosis of appendical abscess, when masked by septic puerperal symptoms, is illustrated by a case which I saw in consultation about a year ago.

The woman had been delivered four days before of triplets, in the fifth month of gestation. Two weeks previously she had a purulent diarrhea. When I saw her the pulse was 120, the temperature 101.3° F.; there was severe pain in the right hypochondrium, and also tenderness on pressure. The pain and tenderness did not extend down to the crest of the ilium; hence, I excluded appendicitis, but suspected hepatitis or perinephritis. The uterus was prolapsed, the cervix lacerated, and there was a free, offensive discharge. The woman was evidently septic, and I attributed the symptoms to a septic endometritis. At the request of the friends and the physician, the patient was transferred to Mt. Sinai Hospital, where I at once curetted the uterus and packed it with iodoform gauze. Dry cups, followed by hot poultices, were applied to the right hypochondrium. As the condition did not improve, two days later I aspirated in the hepatic and lumbar regions, without securing anything; but on trying again, between the ninth and tenth ribs, very offensive pus was withdrawn. The patient was at once removed to the operating-room, and the ninth rib resected, when an immense abscess was opened, which was evacuated and drained. The patient died two days later, and the autopsy showed that the pus came from the pericecal region, having burrowed its way upward until it became subphrenic. The appendix was inflamed and adherent, but no perforation was detected.

I was reminded by this case of one seen a year before, where a woman whose appendages I had removed for pyosalpinx several years previously, was admitted to my service for severe pain in the right hypochrondium. Seeing that the case was not gynecologic I had her transferred to the general surgical service, where the operation revealed a subphrenic abscess, which had originated in an appendicitis.

The mortality in the cases of appendical abscess, occurring during pregnancy, which have thus far been reported, has been rather high. Abrahams (*loc. cit.*) reports seven deaths out of seventeen cases, or seven deaths out of ten suppurative cases; of the latter all but one were operated upon. This death-rate is entirely too high, and must undoubtedly be attributed to the lateness of the operation, due to the failure to make an early diagnosis, an error for which probably the attending physician was to blame. However, considering the meagerness of our information on this complication of pregnancy up to the last two years, the physician can scarcely be censured for his oversight. Future records will undoubtedly show better results, probably quite as good as those obtained under ordinary conditions in either sex.

So far as the relations of perityphlitis and appendicitis to gynecology are concerned, the cases where the latter affections occur simultaneously with acute inflammation, or abscess of the right uterine appendages, or where one of these diseases simulates the other, are naturally far more frequent than the complication with pregnancy. With the pelvic organs in a healthy condition there is no more difficulty in diagnosing an appendicitis in the female than in the male, with the exception of those cases where the vermiform appendix is unusually long and hangs down into the pelvis. A few cases are recorded where the appendix was found on the left side, being unusually long and having been carried there by intestinal peristalsis. Last winter I removed a perfectly healthy appendix, seven inches in length, which had unexpectedly prolapsed into the vagina through an incision in the posterior vaginal vault made to evacuate the blood from a pelvic hematocele. The appendix evidently must have prolapsed into the pelvic cavity before the hematocele was formed, since the roof of the cavity consisted of fresh adhesions. (The cause of the hematocele, by the way, was a ruptured tubal pregnancy, the sac of which I removed per vaginam; the patient recovered.) With the appendix thus displaced, it is evident that the diagnosis between it, when inflammed, and an inflamed tube might be difficult.

Ordinarily in appendicitis the pain, tenderness and swelling are limited to the spot just above and within the crest of the right ilium, and nothing abnormal can be felt through the vagina. It is only exceptionally that an appendical exudate reaches so low down as to be perceptible through the right vaginal roof; and then it might be difficult or impossible to distinguish it from a perisalpingitis or an adherent pyosalpinx, or even a true pelvic cellulitis, such as is occasionally met with after abortion or delivery at term.

An illustrative case was seen by me in consultation last December. The patient had been ill for six weeks with pain in the right ilio-ovarian region, moderate elevation of pulse and temperature, and coated tongue. The physician, an unusually accurate observer, had examined her per vaginam and made the diagnosis of salpingitis on the strength of an exudate which he felt to the right and in front of the uterus, and treatment had been in accordance. As her condition did not improve, I was asked to see her. Being always suspicious of appendicitis when the symptoms are most prominent on the right side, I made a particularly careful external examination of the right iliac and ovarian regions, and thought I could distinctly make out not only dulness, but also a resistance to pressure in the right iliac region. To be sure, these sensations extended down toward the pelvic region in the median line. Vaginal examination showed the hard, immovable mass in the right anterior fornix previously noticed by the attending physician. Basing on the facts that the dulness and tenderness extended from the vaginal roof up to the right iliac fossa, that the mass felt per vaginam was anterior to the uterus, and not deep in the pelvis (as would have been the case in true pelvic cellulitis or perisalpingo-oophoritis), and that the pulse and temperature (110 and 101.2° F. respectively, continuing for several weeks) showed the probable existence of suppuration, I made the diagnosis of appendical abscess, the pelvic mass being part of the exudate which had not yet broken down. The family physician could not make up his mind to agree to this diagnosis until, the patient having been removed to a private room in Mt. Sinai Hospital, he was compelled to be convinced when an incision in the right semilunar line opened the appendical abscess. The pelvic exudate gradually melted away, and the patient was discharged cured in a little over two weeks. It should be added that the patient had had several attacks similar to this one during the last three years.

In both diseases, appendicitis and perisalpingo-oophoritis, with or without suppuration, the conditions of pain, temperature, pulse, tympanites, fecal evacuations, general depression, reflex vomiting, etc., are very similar, and there is scarcely one special sign which would afford us a decided clue in favor of one disease or the other—except the location of the original pain, which, in appendicitis, is never in the pelvic cavity or in close proximity to the uterus. It is not always in the right iliac fossa, or at McBurney's point, unfortunately, for often the chief pain is felt in the epigastric region, or, at times, even in the left iliac fossa, or the pain is spread over the whole abdomen, and is not, therefore, the valuable diagnostic sign which we wish it were. But bimanual (vagino-abdominal) palpation does not cause pain in appendicitis, unless in the comparatively rare instances where appendicitis and salpingo-oophoritis coexist.

So far as the location of the appendical abscess is concerned, when the original exudate has broken down, it is usually found limited to the normal site of the appendix; but, at times, the pus may burrow upward or downward, making its appearance in the subphrenic region, as in the two cases already related, or point in the median subumbilical line, or burst through the right vaginal, or the anterior rectal wall (one case of each seen by me). In such doubtful cases the true origin of the pus may be suspected only by its characteristic fetid odor and thin, saniopurulent character, which leads the physician to trace the abscess with the probe to the right superior iliac region, and to confirm the diagnosis by a careful recapitulation of the history of the case, which will usually show that the first symptoms of pain and discomfort were experienced in the right iliac fossa.

I saw one such case, about a year ago, late one night, with Dr. Alfred R. Crain, who had been treating the patient for what he naturally supposed to be pelvic peritonitis. She was a virgin, but it was not the hymen which opposed the entrance of my finger into the vagina, but the upper bulging of the posterior vaginal wall. On inserting the finger into the rectum, I came against a tense, fluctuating swelling, which burst almost before I could define its outlines, and a torrent of foul, sanious pus was discharged. Its odor at once revealed to me the nature of the case. I washed out the cavity thoroughly, inserted a large drainage tube per rectum, and, under drainage and irrigation, the temperature fell, and a rapid recovery ensued.

This last winter, a case with the history and symptoms of pelvic abscess was admitted to my service at Mt. Sinai Hospital, and seen by me just as I was leaving the ward.

A superficial abdominal examination showed a well-defined, tense, fluctuating mass on the left side, and without making a vaginal examination (I admit, an inexcusable omission) I put the case down for operation on the next day, my regular operating day, intending to open the abscess by an incision in the left iliac region. When the patient was placed on the table next day, to my surprise, I found the elastic swelling in the median line, and assumed that it was an ovarian cyst and that I had made an error in diagnosis. I, therefore, made a median incision, only to find that the uterus and appendages were normal, and that the swelling was retroperitoneal. I then closed the abdominal incision and made a vaginal examination, which revealed a tense protrusion of the posterior vaginal pouch; on opening this, a large quantity of fetid pus escaped, and a probe passed readily up to the crest of the right ilium. The extension of the swelling to the left side on the previous day was doubtless due to the temporary dissecting up of the peritoneum by the pus.

While the appendical abscess may, and probably more often does, simulate a pyosalpinx, pus-ovary, or pelvic abscess, the reverse may at times occur. That is, a pyosalpinx, or pus-ovary, may become adherent to the peritoneal lining of the right iliac region, and both by rational and subjective signs be mistaken for an appendical abscess. I operated on such a case last autumn, and was immensely surprised on opening the peritoneal cavity in the right semilunar line to find an adherent abscess of the ovary. After removing the pus-sac with the tube, I explored the pelvic cavity through the incision and found an intraligamentous abscess of the left ovary, which I removed through a second (median) incision.

Cases of small ovarian cyst with twisted pedicle on the right side have been reported by Drs. Wm. T. Bull, McBurney, and others, I believe, which were mistaken for appendical abscess.

Recurrent appendicitis may readily be mistaken for inflammation of the right appendages, unless a careful examination is made. Several years ago I saw a young lady in consultation who had had seven attacks of severe pain in the right iliac region during the two preceding years, each confining her to bed for a week. Her physician suspected an oophoritis or salpingitis, and asked me to see her with him. Rigidity of the abdominal muscles necessitated examination under chloroform, when I easily decided that the appendages were normal, and that the appendix was twisted, adherent, and swollen to the size of a lead-pencil.

I confess that I have never been able to palpate the healthy appendix, as Edebohls claims can be done, but I do not doubt that with very thin and relaxed abnominal walls it might be done, just as we can often feel the normal Fallopian tube under like favorable conditions.

Even an experienced examiner may make a mistake in diagnosis in these cases of supposed recurrent appendicitis. Recently a young married woman was sent to me for a constant severe pain in the right iliac region. I found a little below the normal site of the appendix a small, hard, very tender, immovable nodule, which seemed to be intraperitoneal, and which I pronounced to be the swollen and adherent appendix. On cutting down on it through the semilunar line I found that the nodule was a fibrous tumor of the size of a hickory nut and extraperitoneal, but so firmly attached to the peritoneum that a strip of the latter had to be removed with it. The peritoneal cavity having thus been opened, I examined the uterine appendages and, finding the right ovary cystic, resected it.

I have spoken of perityphlitis in the early part of this paper. My experience is based on only one case, that of a lady, fifty-six years of age, to whom I was called in consultation last October.

She had been feeling badly for a week, but had not taken to her bed. Three days before I saw her she was seized with a severe pain in the right supra-iliac region, extending down into the pelvis. A physician was not called until two days later. He found the patient in bed, with a pulse of 120; temperature, 102° F.; abdomen tympanitic, and complaining of great pain in the right side. He suspected pelvic peritonitis, and for that reason suggested a consultation with me. When I saw the case, the temperature was 103°F., the right side of the abdomen, from the iliac fossa up to the twelfth rib, was very tender to the touch, rather hard, and there was decided dulness just above the crest of the ilium, extending rather farther back than is usual in appendicitis. Per vaginam absolutely nothing could be felt. I, therefore, excluded pelvic peritonitis, and made the diagnosis of probable perityphlitis, on account of the location of the pain and dulness. I advised immediate operation; the patient was transferred to a private room at the Mt. Sinai Hospital at once, and I operated four hours after I first saw her. My diagnosis was correct; there was an intraperitoneal abscess behind the cecum, the peritoneal cavity being shut off by adhesions. The appendix was adherent, but normal. It was removed, and the wound packed with iodoform gauze. Recovery was slow but uneventful.

It is evident that the practical point of what has been said about perityphlitis and appendicitis, as compared with salpingo-oophoritis, relates to the differential diagnosis between the two diseases. The diagnosis once made, the treatment, whether medical or surgical, will be conducted on the lines laid down for each affection. I would merely remark that in case of doubt I would prefer making the incision in the right semilunar line, since, if it proves to be an appendicitis (suppurative or not) this is the shortest way to reach the seat of the disease. On the other hand, if the case is found to be one of salpingo-oophoritis, or pyosalpinx, or ovarian abscess, the diseased organ can quite as easily be removed through a lateral as through a median incision.

FETAL TYPHOID FEVER AND THE WIDAL REACTION—REPORT OF A CASE.[1]

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THE transmissibility of certain infectious diseases from mother to child has long been an admitted possibility, yet without there being much actual demonstrative proof of the passing of any germ from one to the other. Syphilis can undoubtedly be given by a mother to her offspring, and for years it was just as firmly believed that tuberculosis was constantly transmitted in this way. A certain reaction then took place, and it was claimed that inheritance existed, not of tuberculosis itself, but of a certain susceptibility to contract the disease later. This would appear to represent the true condition in the majority of instances; but there are a number of cases on record in which tubercle bacilli have been discovered in the tissues of fetuses born of women suffering from tuberculosis; and the same has been found equally true of the calves of tuberculous cows.

When we come to a consideration of the acute infectious diseases we find that children may, in rare cases, inherit the disease directly, and be born suffering from it, or may in other rare instances complete the attack while still in utero. This has repeatedly happened in the case of variola, the children being born with the marks upon them. There are several well-authenticated cases on record in which pertussis appears to have been contracted during fetal life; and the fact that infants born of mothers who have had pertussis during pregnancy sometimes exhibit immunity to the disease has been urged as an argument that they had passed through an attack while still in utero. The same reasoning has been applied to rubeola; and it is certain that children have been born with the eruption of measles visible on them. In rare cases newborn children have been found to be suffering from malaria.

With regard to typhoid fever, the question has been more difficult of solution, since the symptoms are less well marked. Yet, cases of apparent typhoid fever in the newborn have been reported by Charceley, and Hastelius found lesions strongly suggesting the disease in a stillborn child of a mother dying from typhoid fever.

It is true that typhoid bacilli have repeatedly been reported as being present in the tissues of fetuses from typhoid mothers; yet, as Dürk has pointed out (*Münch. Med. Wochenschr.*, 842, September 8, 1896), some of these instances must be excluded from consideration, since the investigations were made at a time when the positive recognition of the bacilli was not understood. According to this writer, Eberth (*Fortschr. d. Med.*, B. vii, 161, 1889) was the first to recognize positively the intrauterine infection by the germs. They have also been detected by Hildebrandt (*Fortschr. d. Med.*, B. vii, 889, 1889), Giglio (*Centralbl. f. Gynec.*, No. 46, 819, 1890), Ernst (*Berlin. Klin. Wochenschr.*, 994, 1889), Frascani (*Rivista Gen. Ital. di Clin. Méd.*, 282, 1892), and others.

The detection of the germs being always a difficult matter, the application of the new serum test of Pfeiffer and Widal in the case of the fetus and the newborn is of great interest. As yet but little has been accomplished in this direction. Widal and Sicard (*Bull. de l'Acad. de Méd.*, xxxvi, 347, 1896) obtained the reaction in the blood of the young born of a rabbit which had been inoculated six days before. Chambrelent and Saint Phillippe (*Journ. de Méd. de Bordeaux*, 502, March 15, 1896) found it in the blood of a typhoid mother, and also in that of the child born at the eighth month of pregnancy. The child evidently was ill, and exhibited an enlarged liver and a bronchial catarrh, but its symptoms were indefinite, so far as any indication of typhoid fever was concerned. No statement is made with regard to the child's temperature. Etienne (quoted by Widal and Sicard, *loc. cit.*), on the other hand, failed to find the reaction in the blood of a fetus, although that of the mother responded positively. Charrier and Apert (*La Méd. Mod.*, No. 11, 1896) also failed to find a reaction in the blood of a three-months' fetus, although the blood from the placenta gave it.

In this connection the following instance is of interest: A family epidemic of typhoid fever occurred in the practice of Dr. J. M. O'Malley of Philadelphia, and the father, mother, and three children, the oldest being five years of age, were brought to St. Agnes Hospital during my term of service there. On November 18, 1896, the mother, still ill with fever in the hospital, gave birth, at term, to a well-developed child. It is uncertain just how long she had been ill at this date, for the attack was a rather light one; but rose spots were present on admission on November 13th, and by November 23d the temperature had fallen to normal. It is safe to conclude that the attack was probably in the third week when labor took place. The infant seemed healthy in every respect, except for a slight transitory jaundice. The temperature taken for a couple of days was normal; and as the infant remained entirely well, to all appearance, no further records were made. Blood was taken from the mother and from the child, but, through an error, the examination was of no value. Early in January, the child being then about seven weeks old, a second specimen of blood was obtained, and submitted to Dr. Peckham, at the Laboratory of Hygiene of the University of Pennsylvania. Widal's test showed that in four minutes the bacilli became much less active, and began to collect in groups, and that some little time later they became agglutinated.

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[1] Read before the Philadelphia Pediatric Society.

The conclusion that must be drawn from this case is either that the child had had typhoid fever in utero, and recovered after a very short attack, or that the agglutinating principle had passed through the placenta from the mother to the fetus, without the latter having contracted the disease at all. How the case should be interpreted it is impossible to determine, in the present state of our knowledge. There remains also the hypothesis that the child had imbibed the principle with the mother's milk, but this seems unlikely. Analogy to other infectious diseases, and the fact that fetal typhoid fever does occur, as already pointed out, render the first supposition most probable, *viz.*, that the child, when born, had already had an attack of the fever.

SEPTIC PERITONITIS CONSIDERED FROM THE CLINICAL STANDPOINT.[1]

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Classification.—For the purposes of the practical surgeon a good working classification of septic peritonitis is a desideratum at the present time. Without detracting in the least from Professor Senn's admirable groupings under the headings of anatomic, etiologic, pathologic, bacteriologic, and clinical, it must be confessed that in all probability the last-named, with perhaps some modifications, will be found most acceptable to the every day practitioner.

Custom has sanctioned, to a certain extent, the use of the term "general septic peritonitis." The term "diffuse peritonitis," however, is more generally and logically applicable than that of "acute general peritonitis," for the reason so cogently stated by Dr. Abbe that it is impossible in any given case to state that absolutely every portion of the peritoneum has been invaded. For this reason, therefore, the term "diffuse septic peritonitis," it would seem, is to be preferred to that of "general peritonitis."

So too, with the term "perforative peritonitis." This carries with it the etiologic factor involved in its occurrence, and conveys at once the idea of the possibility of successful remedial measures and the necessity for their immediate application, if the patient is to obtain the best results from surgical intervention.

"Circumscribed" or localized peritonitis is likewise a term which appeals to the surgical clinician. Every practitioner realizes what is to be confidently expected under conditions of strict localization of peritoneal inflammation, provided proper and timely surgical measures are introduced into the case. If a relatively positive diagnosis of localization of the peritoneal inflammation, as distinguished from the diffuse form, can be made, a weight of anxiety and responsibility is lifted from the shoulders of the attendant.

The more recently introduced term "hematogenous peritonitis" likewise has its uses, although the rarity of the condition is now generally recognized. It is certainly to be preferred to the sometime popular, although awkwardly expressed, "cryptogenic septopyemia, a term which savors, to a great extent, of an attempt to take refuge behind the barrier of a high-sounding name in order to escape the necessity of exposing our ignorance.

The frequent occurrence of septic peritonitis of puerperal origin is a sufficient warrant for the use of the term "puerperal peritonitis," aside from the fact that the condition presents striking clinical peculiarities, as well as definite therapeutic indications. The obstetric surgeon particularly, will, without doubt, endorse the retention of this term in the nomenclature of disease.

Although no sharp line can be drawn between the peritoneum of the pelvis and that of the cavity of the abdomen, yet the clinical picture suggested by the term "pelvic peritonitis," if it be understood that by this is meant a peritonitis originating from the female genitals, appeals at once to the experienced practitioner. While pelvic peritonitis is circumscribed peritonitis in a sense, yet the conditions present, as well as the etiologic factors introduced, differ so widely from localized peritonitis as generally understood, that there would appear to be no good reason for dropping this term from general use.

The form of local peritonitis embraced under the general head of "subphrenic abscess," has only recently been removed from the class of cases which permitted of diagnosis in the dead-house almost exclusively. The condition now claims attention at the hands of the clinical investigator, and instances are multiplying daily which serve to demonstrate that a proper appreciation of the conditions present is not only possible at the hands of skilled consultants, but that its recognition by the average medical attendant is demanded as well. Inasmuch as these abscesses have for their manifestation a localized suppurative inflammatory lesion of the peritoneum, either alone or in connection with an infection of the connective-tissue proliferation involved in the formation of peritoneal adhesions, the substitution of the term "subdiaphragmatic peritonitis" for "subphrenic abscess,'' appeals at once to our reason and commendation.

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[1] A contribution to the discussion upon "Peritonitis" at the Fourth Triennial Congress of American Physicians and Surgeons, Washington, D. C., May 4–6, 1897.

Prognosis of Bacterial Invasion of the Peritoneum.—Inasmuch as the general consensus of opinion at the present day among investigators holds the practitioner to the view that peritonitis is exclusively of bacterial origin, the question of prognosis of infectious peritonitis, in the general sense, as in inflammatory infectious conditions elsewhere, simply relates to the balance to be struck between virulency and extent of infection on the one hand, and the degree of vital resistance on the other. With a small amount of even a comparatively innocuous germ present, a fatal peritonitis may follow prolonged handling and consequent extensive abrasions of the peritoneal surfaces, and a comparatively slight traumatism, in the presence of a streptococcus pyogenes infection, may be followed likewise by a fatal result. Further, it has been shown by Grawitz that the peritoneum is tolerant of a certain amount of even highly infectious material, provided there is nothing present that can furnish the pabulum necessary for the growth and increase of the bacteria. Up to a certain point the serous membrane is capable of destroying the bacteria, but beyond this its power ceases, and the irritating properties of the toxic products of the microorganisms assert themselves. Finally, it should be borne in mind that it is not necessary for bacteria to multiply in order to produce peritonitis. Their contact with the peritoneum under circumstances which likewise become the occasion for transudation of serum, effusion of blood, or injury to and perhaps sloughing of tissues, or the simultaneous entrance of other substances which may serve as proper nutritive material, such as feces, affords opportunity for the production of those toxic substances upon which their irritating properties depend, without the necessity for increase in number of the bacteria themselves.

The methods of invasion of the peritoneum will largely govern the outcome of the infection. These methods of invasion are self evident. They include introduction from without through wounds involving both skin and peritoneum; passage through perforation, the result of a traumatism or destructive inflammatory lesion of some hollow viscera; by penetration of the walls of the viscera because of the impairment of the nutrition of such wall; by progressive and continuous growth of bacteria in the substance of the wall of a viscus the seat of a septic inflammation, such as the uterus; and finally, by infection through the blood- or lymph-vessels from some more or less distant focus.

The occurrence of peritonitis without the actual presence of bacteria is of great interest in this connection. This may occur if their toxins reach the serosa, which they may do, by penetration of the visceral walls without the presence of any actual lesion. It is now likewise believed that the bacteria themselves may pass through a visceral wall without multiplication, as well as without exciting any apparent disturbances in those tissues, as in the instance of the wall of a hernial sac.

A further question of great interest in connection with this subject is that of the germicidal power of the serous effusion of the peritoneal cavity. Like the blood serum elsewhere, the serum of the peritoneum possesses to a certain extent the power of destroying even the most virulent microorganisms. There is a limit to this power, however, and when this is reached the bacteria remaining undestroyed find at once the proper pabulum for their numerical increase, as well as the development of the toxic substances upon which their pathologic properties depend. To this germicidal power of the peritoneal effusion upon the one hand, and the now well-known fact first established by the experiments of Wieland that the bacteria in encapsulated abscesses in the peritoneal cavity tend to die out upon the other, is to be attributed the occasional recoveries ensuing in instances where the operative procedure reveals a large amount of thin and opaque serum, the result of rupture of a seropurulent intraperitoneal collection, with an appendical lesion as the original focus of infection. The intestines float in an abundance of this fluid, yet both the visceral and the parietal peritoneum are scarcely injected, much less actively inflamed. A number of such instances have come under my observation in which uninterrupted recovery has followed incision, removal of the original focus of infection, and gauze drainage. In none of these cases have I been able to directly demonstrate bacteriologically the sterility of the abdominal fluid, but this does not alter the fact that the recoveries were due either to the germ resisting and destroying powers of the peritoneum, to a slow process of sterilization of the contents of the original encapsulation, or both. Besides, no amount of negative evidence in a test-tube appeals so strongly to the surgeon's senses as the presence of normal intestines floating about in sero-pus, the latter bathing everything in sight—and yet not the slightest trace of infection, as evidenced by tinge of abnormal hue, to be seen, to say nothing of the circumstance of recovery without the supervention of the first symtom of local or constitutional disturbance.

The most dangerous of these modes of entrance is that which involves a perforation of the intestinal wall of the small intestine, and the least dangerous that which occurs in connection with a wound of the abdominal wall. In the first mentioned, not only is there a great number of bacteria which escape into the peritoneal cavity, but these are most virulent in character and are accompanied by toxins, the result of their growth in the intestinal canal. There likewise is deposited upon the peritoneal surfaces fecal matter which acts in the dual capacity of a pabulum for the growth of the bacteria, and an irritant which excites serous exudation. The latter, as soon as its germicidal power is exhausted; also becomes a rich culture medium for the propagation of the germs. It is this "concatenation of adverse circumstances" which accounts for the high mortality following this accident. The size of the perforation and the rapidity with which the contents of the intestine escape will govern, to some extent, the prognosis in cases of intestinal perforation. When the small intestine is the seat of the perforation the fecal matter may be poured out rapidly and a diffuse septic peritonitis from mixed infection promptly follow. In perforation involving the large intestine the exit of fecal matter may be comparatively slow; adhesive protective barriers are thrown out before diffusion of the infecting agents occurs. The infection is thereby limited and a localized suppurative peritonitis follows, as, for instance, in peri- and paracecal abscess (suppurative perityphilitis).

If, however, a diffuse instead of a circumscribed suppurative inflammation follows the infection, as occurs in the great majority of perforations involving the small intestine, there occurs a train of most dangerous symptoms due to the absorption of septic material from the extensive surface area of this enormous lymph sac.

The least dangerous of the modes of entrance is that which occurs in connection with a wound of the abdominal wall. But a comparatively small number of bacteria are introduced in this manner, probably not more, in the majority of instances, than the peritoneum itself is able to destroy by its serum. These circumstances explain the comparative immunity from danger of many cases of abdominal section for non-suppurative lesions of the uterine appendages at the hands of surgeons who boast of their neglect to protect their patients by the employment of an antibacterial operative technic.

Concomitant circumstances may arise to render the last-mentioned mode of bacterial invasion most dangerous, as, for instance, the simultaneous occurrence of contusion of the peritoneal surfaces, laceration of some of the hollow viscera, the occurrence of hemorrhage, or the presence of a foreign body. Per contra it may happen, as before stated, that a small perforation with slow escape of the contents of the intestine may lead to encapsulation by adhesive barriers and protection of the general peritoneal cavity.

Between these two extremes are to be mentioned, in the order of their gravity—first, invasion through perforations or wounds of viscera, other than intestine, including the kidneys, pancreas, and biliary ducts, ureters, etc., and the eruption of a neighboring abscess, save only when the pus of the latter is sterile. Second, the entrance of bacteria by continuous inflammatory growth through the walls of a portion of the intestinal canal or other hollow viscus. While the mode of invasion here is dangerous from the fact that a large number of bacteria may find their way to the peritoneal surface in a short time, the method of entrance may be resisted by the formation of adhesions upon the menaced serous surface. As an instance of this manner of bacterial invasion may be mentioned the successive occurrence of endo-appendicitis, parietal appendicitis, and finally peri-appendicitis. Third, infection of the peritoneum by way of the Fallopian tubes. The comparatively lessened dangers of this route of infection relate (*a*) to the fact that the source of bacterial supply is not large, the endometrium possessing a high degree of vital resistance and its secretion rendering its cavity in most instances sterile, as shown by Warbasse's investigations; (*b*) to the relatively low grade of virulency of the two kinds of bacteria most frequently found in tubal infection, namely, the gonococcus and the bacillus tuberculosis; and (*c*) ample opportunity is usually afforded for the production of competent adhesive barriers, including those which seal the opening of the tube and confine the infection to the latter and its immediate vicinity. Fourth, those cases in which the bacterial migration takes place through the wall of the intestine as the result of nutritive disturbances of the latter, such for instance as occurs in strangulated hernia. Comparatively few bacteria escape in this manner, while at the same time there is a copious effusion of serum. The germicidal power of the latter is sufficient to destroy the bacteria if the latter are not too numerous. This accounts for the fact that in later years other sources of infection being guarded against, relatively few cases of diffuse peritonitis follow operations for strangulated hernia, unless gangrene and perforation of the bowel wall has taken place.

In estimating the prognosis of peritonitis the practical surgeon will be compelled to take into account the source and virulency of the infection, the mode of entrance of the bacteria, the concomitant circumstances of injury to the viscera, hemorrhage and large serous exudations, and last but not least, the extent of the localization of the infection on the one hand and its generalization on the other. A case of the most violently infectious peritonitis, if localized, may recover, providing proper and timely surgical aid be rendered, and its suppurative products evacuated. It is equally true, likewise, that a comparatively mild, yet widely diffused infection may destroy life, the general system finally becoming overpowered by the toxic products furnished by absorption from an extensively involved area of serous membrane.

Treatment.—With the measures designed to meet the conditions present in a localized suppurative peritonitis, I need scarcely detain you in this discussion. Free incision and proper drainage cover the ground completely. The large majority of cases so treated recover as promptly and satisfactorily as where the same principles of treatment are applied to a suppurative collection elsewhere. In the very recent past the almost unqualifiedly favorable prognosis which the surgeon was able to give in cases of localized suppurative peritonitis was as absolutely reversed in the case of advanced diffuse septic peritonitis as is the day removed from the night, no matter what treatment was pursued. So great are the difficulties in the way of the complete emptying, disinfecting, and draining of the peritoneal cavity, and so dire are the effects upon the vital centers of the enormous quantities of toxic products which find their way from the extensive area involved in the infection, that the surgeon has been almost absolutely without resource in the face of this condition of affairs. He is handicapped at every turn. Persistent vomiting and the early intolerance of the rectum to nutrient enemata prevent him from reinforcing the patient's fast-waning strength, and paralysis of peristalsis robs him of the most efficient non operative method of drainage of the peritoneum. The passage of fecal matter into the stomach adds the damaging effects of stercoremia to the already existing toxemia. These, together with the weak and rapid pulse, vasomotor paralysis, and mental hebitude, combine to stamp the condition as almost absolutely hopeless.

Before these symptoms of systemic infection have advanced to this stage, however, there is a period varying from a few hours to a day or two, during which these symptoms are less aggravated or perhaps absent, and yet sufficient evidence of peritoneal inflammation is present to base a diagnosis upon. Herein resides the surgeon's opportunity. In proportion to the ability on the part of the medical attendant to recognize the true state of affairs early, and his willingness to share the responsibility of the case with the surgeon on the one hand, and the skill, judgment, and particularly moral courage of the latter on the other, will the prognosis in peritonitis improve.

During the past two years there have been a number of cases of diffuse septic peritonitis operated upon successfully, and the matter has reached a stage where the surgeon's margin in escaping responsibility in not operating is becoming narrower and narrower. While there may be cases here and there where the patient's doom is sealed from the very commencement, yet, in view of the knowledge derived from the bacteriologic laboratory and experimentation upon animals, it is difficult to conceive of such a case. If the Lembert suture could close the perforation immediately upon its being made, or the gauze drain carry off the septic products as soon as these are produced, what, other things being equal, would kill the patient?

Still another ray of light has been cast into this dark recess of the surgeon's domain. Encouraged by the success that has followed the antitoxin serum treatment of diphtheria, experimenters have sought to produce an antitoxin to other pathogenic bacteria. The fact that the streptococci are of such importance as etiologic factors in phlegmonous inflammation, and are found so frequently associated with other micro-organisms in the most severe and complicated forms of infectious disease have led to a careful study of this microbic agent. As a result of these studies much has been learned from a biologic standpoint; what is of greater importance, however, if the hope of the present is realized in the future, an antitoxin has been developed for this germ.

Although not all experiences with the treatment of septic peritonitis by means of the streptoccus antitoxin have been favorable so far as a successful result is concerned, yet they have been such as to warrant further investigation of the new agent as a means of combating the general infection.

It would be out of place in a discussion of this character to enter elaborately into the subject of serumtherapy, but I may be pardoned if my estimate of the importance of this subject leads me to refer to the recent experiences of some of my colleagues in New York, as well as of my own. The interest in these cases is enhanced by the fact that some of them have not yet been published.

Dr. Howard Lilienthal has kindly placed at my disposal abstracts of three cases bearing upon this question. The first was a case of perforative appendicitis followed by diffuse septic peritonitis. At the operation (June, 1896) pus and feces were present in the peritoneal cavity. One injection of 12½ c.c. of the streptococcus antitoxin was administered. A secondary intraperitoneal abscess required surgical intervention some days later. Recovery ensued. The second was a case of diffuse peritonitis from disease of the uterine appendages treated by operation. The temperature dropped to normal after one injection of streptococcus antitoxin. Death followed from paralysis of peristalsis. The third case was that of a boy of ten who was suffering from diffuse peritonitis caused by appendicitis, and who was almost moribund at the time of the operation. The patient died even though the antitoxin was administered.

Dr. M. R. Richard, of New York, in a personal communication gives me the details of a most interesting experience with the serum of Dr. Marmorek of the Pasteur Institute in Paris. The patient was also seen by Drs. Mundé and Brettauer. The case was one of post-puerperal infection. Thorough curettement under chloroform failed to effect any amelioration in the symptoms. Five days afterward the temperature was 106.2° F., the pulse 150, and the respirations 46. There was a fall of 2° one hour after a 10 c.c. injection of the Marmorek serum, and a further fall of 2.2° after the second, making a total fall of 3.8° in twelve hours. A fall of 6° took place in thirty-one hours. This patient recovered.

My own case is as follows:

A. V., aged twenty-nine, was seen by me in consultation late in the evening of April 9, 1897. A history of at least three previous attacks of appendicitis, occurring within the last four years, was obtained. Twenty-eight hours prior to my visit the first symptom of the present attack of appendicitis began. These progressed rapidly, and perforation had evidently taken place within twelve hours of the commencement of the attack. Efforts to obtain catharsis by means of calomel and sulphate of magnesia had proved ineffectual. When seen by me the temperature was 103.5° F., and the pulse 130. The abdomen was distended, everywhere tympanitic, and extremely rigid. Maximum point of tenderness just below the umbilicus.

He was removed to the Brooklyn Hospital and the abdomen opened in the median line. A diffuse septic peritonitis with pus and fecal matter in the cavity of the peritoneum was found. About fifteen inches of ileum, was bluish black in color and necrotic in spots, and was bound firmly by adhesions in a mass in the median line. Parting the adhesions, a gangrenous and perforated appendix was discovered and removed. The cavity of the abdomen was thoroughly irrigated with sterilized salt solution, the incision being extended to gain access to the regions of the spleen and liver. The cavity was drained by gauze in four directions, supplemental incisions being made for the purpose, *i.e.*, in the hepatic, splenic, and iliac fossæ; gauze drains were also led out of the upper and lower angles of the median wound. Copious absorbent dressings were applied.

Within six hours of the operation the temperature dropped to 98.6° F., the pulse to 110. At the end of twelve hours the temperature was found to be rising, having reached 100° F. and the pulse 140. At this time 12.5 c.c. of streptococcus antitoxin was injected in the left buttock. In spite of this, however, the temperature rose in eight hours to 101.2° F. A second injection of 12.5 c.c. was now given. In the course of the following eight hours the temperature had fallen a trifle over 1 degree, and the pulse to 116. A third injection was followed by another fall of .6 degrees, the pulse-rate being 94. In the course of the next eight hours the temperature rose a degree, and the pulse to 116. A fourth injection of 8.3 c.c. was now administered. No change in pulse and temperature followed this injection. A fifth injection of 8.3 c.c. was given after six hours; this was followed by a fall of the temperature to normal, but the pulse rose to 120. An injection of 8.3 c.c. every six hours was followed by a practically normal temperature, the pulse ranging from 114 to 120 for the next twelve hours. The temperature then rose to 101° F., and the pulse to 126. From this time until his death, which took place on the fifth day following the operation, and the sixth of the disease, the temperature was practically uninfluenced by the serum, although the pulse-rate remained in the neighborhood of 100; just before his death, counted at the heart, it was 80.

Fecal vomiting, due to paralysis of peristalsis, was present at intervals for forty-eight hours before death. This was met with frequent lavage, the stomach tube being utilized after each lavage for the introduction of liquid food. The usual heart stimulants were likewise employed throughout the case. The *morale* of the patient was excellent until a few hours before death. There was likewise a complete absence of vasomotor paralysis until an hour before the lethal result. The daily excretion of urine was uninfluenced, and the slight albuminuria present before the operation was neither increased nor diminished by the treatment; 250 c.c. of the serum in all was used.

The autopsy revealed a gangrenous condition of the parietal and visceral layers of the peritoneum throughout almost the entire region of the small intestine. The peritoneal cavity everywhere was dry and clean. The most indubitable evidences of a diffuse, unlimited peritonitis were present.

The fact that the drainage was so complete, as revealed by the autopsy, taken in conjunction with the somewhat contradictory results of some of the injections as compared with others, leads me to express some doubt as to the influence which the serum exercised upon the course of the case.

The case reported by Dr. Egbert H. Grandin[1] is worthy of comment. The case was one of suppurative peritonitis due to a gangrenous and perforated appendix, which was removed by operation. The patient pulse was 90 and temperature 100° F. Hot salt water irrigation and gauze drainage from the median wound were practised. After a few days a pus cavity containing over a pint was evacuated on the left side, just above Poupart's ligament, a counter opening being made at the same time into the vagina, thus establishing thorough drainage. Upon the following day another series of pus pockets was opened, irrigated, and drained. Upon the next succeeding day another incision uniting the two last was made upon the left side of the abdomen. It was upon this day that the streptococcus antitoxin was first used.

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[1] *Medical Record*, New York, 1897.

This patient recovered. In view of the fact that the reporter, in the early part of his article, expresses a doubt as to whether the entire abdomen had been infected, and later on relates how he opened and drained circumscribed collections of sero-pus; and the further fact that these most valuable and ordinarily efficient measures in circumscribed peritonitis had been instituted before the administration of the serum, there must remain a very decided doubt as to the part which the antitoxin played in bringing about the favorable result.

In perforative peritonitis, as before stated, a mixed infection is present in the vast majority of cases; while it is probably true that the streptococcus pyogenes is among the most virulent, if indeed it is not the most virulent microbic organism present under these circumstances, it is not by any means the only one capable of destroying life. With this fact before us, and the knowledge that the antitoxin of one class is powerless against another, it at once becomes evident that, in order to proceed rationally, the surgeon and bacteriologist must work side by side, an antitoxin to each pathologic bacterium being furnished, according to the findings.

And this is as it should be. The bacteriologist for years has been working out biologic problems in his laboratory, but only here and there has the every-day practitioner been able to avail himself of the knowledge thus gained. Among the notable instances of the practical application of this knowledge is the treatment of diphtheria by means of the antitoxin of its own infecting agent. If the claims made for this method of treatment are well-founded, there is no reason why immunization against the toxic substances produced in the life history of other germs should not be secured, providing the law that each microbic organism is capable of producing an agent antagonistic to its own toxic products—in other words, an antitoxin—holds good in all cases of bacterial infection. Now let bacteriologic science step forth and take its place among the specialties in practical medicine, for such a place surely awaits it. Backed by a diagnosis based upon a properly conducted bacteriologic examination, reinforced by means of systemic infection, if this occurs, and stimulated by a reasonable hope of eventually saving the patient's life, the surgeon will be emboldened to enter upon those extensive operations which, up to this time, while perfectly understood and appreciated by the bulk of the profession, have served not only to cast undeserved opprobrium upon the individual operator at the hands of the laity, but to bring into disrepute surgical science and art as well.

THE AMERICAN PEDIATRIC SOCIETY'S REPORT ON THE COLLECTIVE INVESTIGATION OF THE ANTITOXIN TREATMENT OF LARYNGEAL DIPHTHERIA IN PRIVATE PRACTICE. 1896–1897.

IN this second and supplementary investigation, the aim has been to ascertain: (1) What percentage of cases of laryngeal diphtheria recover without operation under antitoxin treatment? (2) What percentage of operated cases recover? The report now submitted may properly be limited to answering these two inquiries.

Since the beginning of the general use of intubation, no disease has been more thoroughly observed and more fully reported than laryngeal diphtheria. Operative cases, especially, without hesitation, whether ending fatally or favorably, have been fully and promptly put on record. The result has been a collection and tabulation of cases available for control, such as few diseases offer. There are thousands of intubation cases before the days of antitoxin, and thousands since, available for comparison. It is then to cases of laryngeal diphtheria, especially those requiring operative interference, that we may apply the crucial test of the value of the antitoxin treatment.

Sixty thousand circulars containing the following questions have been distributed:

Age of patient?

Diagnosis confirmed by:

1. Presence of other cases in the family?
2. Appearance of membrane elsewhere?
3. Bacteriologic cultures?

How many days and parts of a day after the first appearance of the disease was antitoxin first administered?

How many doses of antitoxin were administered?

Dose of each injection in antitoxin units?

Whose antitoxin used?

Non-operative cases—evidence of disease:

Hoarseness?

Aphonia?

Stenosis?

Operative cases:

1. Intubation? On what day?
2. Tracheotomy? On what day?

How long, in days and fraction of a day, was tube in the larynx or trachea?

Sequelæ (in recoveries):

1. Bronchopneumonia?

2. Paralysis?
3. Nephritis?

Death, cause of, and on what day?

1. Bronchopneumonia?
2. Extension of membrane to the bronchi?
3. Sudden heart paralysis?
4. Nephritis?
5. Sepsis?
6. Accidents of operation?

Recovery?

Remarks, especially on fatal cases?

These circulars were distributed throughout the United States and Canada, the following means being employed: Contributors to first reports, members of the Society acting as agents for their respective localities, boards of health, local medical societies, and antitoxin manufacturers. At the outset, in this connection, it is a pleasure to acknowled that the labors of the committee have been much lightened by the uniform good-will of all addressed, more aid coming spontaneously than in the previous investigation. It is also a pleasure to especially acknowledge the Society's indebtedness for efficient aid in distributing circulars and securing returns to the H. K. Mulford Co., Parke, Davis & Co., Lehn & Fink (Gibier's), the Health Departments of Chicago, St. Louis, New Orleans, Denver, San Francisco, Boston, Washington, Buffalo, Providence, Ann Arbor, Newark, Montreal, Toronto, and others.

To the New York Health Department is due the thanks of the Society for every possible courtesy in distributing blanks, and, through their inspectors, of securing returns of operative cases.

In order to reduce sources of error it was desirable to bring together a large number of cases, from widely distributed localities, from many different observers and operators, and from a period of time including all seasons of the year. All returns have been examined by the committee, and only such cases accepted as bore satisfactory evidence that they were first of all diphtheria, and secondly that the lesion had invaded the larynx.

A total of 1704 cases of laryngeal diphtheria are ours for present study. A few cases (228) had not satisfactory evidence that there was laryngeal involvement; indeed, some were reported through misunderstanding the fact that only laryngeal cases were wanted, and a few were reported in which there was no mention that antitoxin was used. These cases are, of course, not included in the number referred to above; 218 of them ended in recovery and only 10 were fatal.

In a total of 1704 antitoxin-treated cases of laryngeal diphtheria, there was a mortality of 21.12 per cent. (360 deaths).

TABLE OF ALL CASES SHOWING AGE AND RESULT OF TREATMENT.

	Fatal Cases.	Recoveries.	Totals.	Mortality.
1 year and under,	25	35	60	41.66 per cent.
1 to 2 years,	77	219	296	26.01 per cent.
2 to 3 years,	81	260	341	23.75 per cent.
3 to 4 years,	42	216	258	16.27 per cent.
4 to 5 years,	47	160	207	22.70 per cent.
5 to 10 years,	72	345	417	17.26 per cent.
10 to 15 years,	9	64	73	12.32 per cent.
15 to 20 years,	2	24	26	7.65 per cent.
Over 20 years,	5	17	22	22.72 per cent.
Unknown,	0	4	4	
	360	1344	1704	21.12 per cent.

CASES NOT OPERATED ON.

The first inquiry of the circular was What percentage of cases of laryngeal diphtheria recover without operation under antitoxin treatment?

Of 1704 total cases, 1036 were not operated upon (60.79 per cent). Of these, most did not require operative interference, a few cases were thought to require it, but operation was refused. All cases are included, and it will be noted there are no eliminations.

Among the 1036 cases not operated on, there was a mortality of 17.18 per cent. (178 deaths), or, to answer the inquiry of the circular exactly, of 1036 cases not operated on, 82.82 per cent. recovered (or 858 cases).

As good as is this percentage of recovery in so large a number of cases of diphtheria of the severest type, it is believed it is not as good as it ought to be. Cases of laryngeal diphtheria not requiring operation, according to the testimony of consulting intubationists, are seldom heard from a second time, and less often find their way into reports. It was formerly estimated that about 10 per cent. of cases of laryngeal diphtheria recovered without operation. The present report shows that in 1036 cases 82.82 per cent. recovered.

CASES OPERATED UPON.

In analyzing this class of cases, it is believed a more exact conclusion as to the value of the antitoxin treatment can be arrived at than in the non-operative.

There will be entire harmony of opinion as to the severity of laryngeal diphtheria which requires operative interference. In the early days of intubation it was customary to speak of the percentage of recoveries, and twenty-five per cent. and twenty-seven per cent. were considered good results. In the last report the recoveries had crept up so high in the one hundred cases that it seemed more natural to speak of the percentage of mortality.

In this connection it is interesting to inquire what were the most reliable statistics of intubation, taking cases as they occurred, without selection, in pre-antitoxin days. In 5546 intubation cases collected by McNaughton and Maddren in 1892, the mortality was 69.5 per cent., or, to bring the facts into line, 30.5 per cent. recovered.

O'Dwyer's personal experience, in private consultation, brings us more nearly face to face with the old-time experience with diphtheria. Note that the following 500 cases came under the observation and care of one practitioner, a skilled operator, extended over a dozen years of time, and therefore included all types of the disease.

Exclusive of the first 100 cases of intubation, which he (O'Dwyer) regards as experimental, the results stand as follows:

2d, . .	100 intubations,	recoveries,	27 per cent.
3d, . .	100 "	"	30 "
4th, . .	100 "	"	26 "
5th, 70 in the	100 "	"	27 "

Total percentage of *recoveries*, 27.56 per cent. When he had reached 70 in the fifth hundred something occurred which carried the phraseology up over the divide, so that it was appropriate to speak of percentage of *mortalities*. At this point in history antitoxin arrived, and interrupted forever the old series. In O'Dwyer's next fifty-nine cases the *mortality* was fourteen deaths, or 23.7 per cent.

In a total of 1704 laryngeal cases there were 668 cases operated upon. In the 668 there were 182 deaths, or a mortality of 27.24 per cent. In the former report, in 553 intubated cases the mortality was 25.9 per cent. In approximate figures there is a difference between 27¼ per cent. and 26 per cent.

SUMMARY.

Sixty thousand circulars were distributed throughout the United States and Canada.

Time allowance, the eleven months ending April 1, 1897.

Whole number of cases in this report, 1704; mortality, 21.12 per cent. (360 deaths).

The cases occurred in the practice of 422 physicians in the United States and Canada.

Operations employed:

(*a*) Intubation in 637 cases; mortality, 26.05 per cent. (166 deaths).

(*b*) Tracheotomy in 20 cases; mortality, 45 per cent. (9 deaths).

(*c*) Intubation and tracheotomy in 11 cases; mortality, 63.63 per cent. (7 deaths).

Number of States represented, twenty-two, the District of Columbia, and Canada.

Non-operated cases, 1036—60.79 per cent. of all cases; mortality, 17.18 per cent. (178 deaths).

Operated cases, 668, or 39.21 per cent. of all cases; mortality, 27.24 per cent. (182 deaths). Two facts may be recalled in connection with this paragraph. (1) That before the use of antitoxin it was estimated that 90 per cent. of laryngeal diphtheria cases required operation, whereas now, with the use of antitoxin, 39.21 per cent. require it. (2) That the percentage figures have been reversed, formerly 27 per cent. approximately representing the recoveries, whereas now, under antitoxin treatment, 27 represents the mortality. To put it in other words, before the use of antitoxin, 27 per cent. recovered; now 73 per cent. recover, and this in the severest type of diphtheria.

The present report will strike many members of the Society as revealing a mortality too large in each of the two classes. The mortality is large—larger than the personal experience in private practice of many would expect.

The reasons for this are (1) that antitoxin is still used too late, either from procrastination on the part of the physician, or objection on the part of the friends, or (2) in a half-hearted way, which shows itself in doses from one-tenth to one-fourth as large as they should be. In truth, both the physicians and the friends of the patient are timid.

This report, it must be admitted, shows too large a mortality. In the opinion of the Committee it is a larger mortality than will ever be shown again. Antitoxin is gradually being used earlier in the disease, and it will soon be used in sufficient doses.

To the Society, the Committee desires to say that it has sought to carry out their wishes in putting antitoxin on trial, to accept no testimony that did not bear the stamp of reliability, that it has employed the methods approved in the case of the first investigation and report, and that it has confined its work to definitely answering the main questions which the Society and profession now have in mind. Points that were settled in the first report and have since been corroborated by general medical literature are not again taken up.

If the Committee is asked to put forth the three most valuable points established in this eleven-months' work, they are:

1. The mortality of laryngeal diphtheria at present rests at 21.12 per cent.

2. That 60 per cent., approximately, have not required intubation.

3. That the mortality of operated cases is at present 27.24 per cent.

(Signed) W. P. Northrup, M.D.
Joseph O'Dwyer, M.D.
L. Emmett Holt, M.D.
Samuel S. Adams, M.D.

THE COMMITTEE RECOMMENDS:

Antitoxin should be given at the earliest possible moment in all cases of suspected diphtheria.

Quality.—Of the products on the market some have, by test, been found to contain one-half to one-third the antitoxin units stated on the label. Select the most concentrated strength of an absolutely reliable preparation.

Dosage.—All cases of laryngeal diphtheria, the patient being two years of age or over, should receive as follows:

First dose—2000 units at the earliest possible moment.

Second dose—2000 units, twelve to eighteen hours after the first dose if there is no improvement in symptoms.

Third dose—2000 units, twenty-four hours after the second dose, if there is still no improvement in symptoms.

Patients under two years of age should receive 1000 to 1500 units, the doses to be repeated as above.

CLINICAL MEMORANDUM.

ADHERENT PREPUCE AS A CAUSE OF CONVULSIONS IN CHILDREN.

BY J. HERBERT DAREY, M.D.,
OF NORTHWOOD, IOWA.

DURING the past year I have met with three cases of stupor and convulsions in male children, to which no other cause could be assigned than the presence of a prepuce adherent to the glans penis. All of the patients were promptly relieved by operation. These cases have strongly impressed me with the importance of a careful and thorough examination of the prepuce and glans penis in all cases of convulsions occurring in male children, when all other possible causes of reflex irritation have been eliminated.

CASE I.—Seen in consultation with Dr. D. S. More of Northwood, March 18, 1896. The patient, aged two years, had been under observation for a week or ten days, and during this time had been in a condition of stupor, from which he could be aroused only with difficulty, and into which he would immediately relapse after having been shaken. His head was normal in size, and no symptoms of brain pressure were present. The pupils were normal, and reacted readily to light. There was no trouble with his dentition. Micturition was very frequent. Anthelmintics and purgatives had been administered, with negative results. The foreskin at the meatus was red and irritated, and on passing a probe beneath it adhesions were found between its under surface and the glans.

The prepuce was divided and the adhesions separated, but as the former was not unduly elongated, circumcision was not performed. The wound was dressed with iodoform gauze soaked in carbolized oil, and the patient was put on drop doses of aconite, as his temperature varied from 102° to 104° F. The results were all that could be desired. The wound quickly healed, and in a few days he rallied from his condition of stupor, his temperature dropped to normal, and he has been well ever since.

CASE II.—This patient was also seen in consultation with Dr. More, on April 4, 1896. He was ten months of age, and had had a great number of convulsions, which had been considered epileptic. The father of the patient had had epileptic convulsions when a child, but had been cured. No cause could be found for the convulsions in our patient except an adherent prepuce. Circumcision had been performed by another physician, but the convulsions continued. When I was called in, his condition was such that he could be controlled only by the free administration of chloroform. He was put on bromids, and Dr. More subsequently prescribed a preparation of passiflora. He gradually improved, and is now strong and healthy, and has not had convulsions for some months.

CASE III.—This patient, aged two years and one month, was strong and healthy, and of good healthy parentage, there not being a trace of neurotic history in either parent. He had one severe convulsion last summer, which was attributed to an overloading of the stomach and bowels. On January 11, 1897, he was taken with a severe convulsion, which lasted upward of three-quarters of an hour. I put him on large doses of bromids, at once. The same evening his temperature rose to 103° F., and it was only by the constant use of chloroform for a considerable period of time that he was kept from going into other convulsions. I gave him two grains of acetanelid and tincture of aconite in drop doses, every hour, to reduce his temperature, but, in spite of this treatment, his temperature steadily rose to 105° F. I then put him in a wet pack, which speedily reduced his temperature a couple of degrees. It began to rise again rapidly, however, and he was extremely restless and nervous. I now put him in a tub of water at a temperature of about 90° F., gradually reducing the bath to 70° F., by the addition of cold water. I left him in the bath until he began to shiver, and goose-flesh was well developed all over his body. He was then taken out, rubbed dry, and rolled up in flannel blankets. His temperature was reduced to 101° F., and he had a sound, refreshing sleep. The next day he was much quieter and free from nervousness, but toward night he became very restless again, and his temperature rose steadily, but not to such a high point as before. The bromids and aconite controlled the condition sufficiently, and it was not necessary to resort to the cold bath. Next day he began to grow worse again, and I examined his penis to see if I could find any source of irritation there. The prepuce was red and angry-looking, and on inserting a probe I found adhesions. I advised circumcision as the only means of relieving the reflex source of irritation and stopping the convulsions. This was readily acceded to by the parents; so I operated at once. The inner surface of the prepuce was universally adherent to the glans penis, and had to be dissected off, bit by bit. The wound healed nicely, and the patient began to improve rapidly and to gain flesh. He has had no return of anything approaching convulsions since.

MEDICAL PROGRESS.

The Causes of Cancer of the Uterus and Its Best Treatment.—In the *Archiv. de Gyn.*, Vol. liii., p. 47, 1897, Backer reports his investigations of the 705 cases of carcinoma of the uterus treated in the University Clinic at Budapest from 1882 to 1895. From the study of this extensive material he attempts to answer three questions: (1) "Is the cause of carcinoma of the uterus of such a nature that one can speak of prophylactic treatment?" (2) "What are its initial symptoms?" (3) "Which is the best operation, and what results may be expected?"

From the most careful study of the cases, with reference to their age, marriage, number of children, etc., the author concludes, in answer to the first question, that as yet there is no known definite cause of carcinoma. There is no ground to believe it to be due to a micro-organism.

The clinical cause which, in a certain way, prepares the tissues for carcinoma of the uterus is endometritis, whose beginning, in most cases, dates from confinement. This statement rests upon certain facts shown by his statistics, as follows:

(*a*) Carcinomatous patients have borne more children than non-carcinomatous patients, but the carcinomatous trouble, in most cases, occurs not immediately after birth, but after a lapse of some years.

(*b*) Not every chronic endometritis favors the development of carcinoma, but an endometritis of a particular type, namely, a puerperal type. The proof of this lies in the relative freedom from carcinoma of sterile women and those women who suffer from gonorrheal endometritis.

(*c*) In almost every case of uterine carcinoma there is a chronic catarrh.

(*d*) The disease occurs much oftener in married women and widows than in single women.

(*e*) Carcinoma of the uterus occurs more frequently among the poor than among the rich, and the former are much more apt to allow a leucorrhea to run on untreated.

(*f*) This opinion of the predisposition of inflammatory processes is recognized in relation to carcinoma elsewhere in the body; for example, in the breast, stomach, etc.

In answer to the second question, Bäcker calls attention to two symptoms, the importance of which, in the early diagnosis of carcinoma uteri, has been somewhat overlooked. One of these is the occurrence, very early in the disease, of disturbances of the bladder, consisting usually of frequency and urgency of micturition.

The other symptom has reference to the consistence of carcinomatous tissue. This is hard, but brittle, while chronic endometritis produces a tissue which is hard and tough. If the carcinoma, therefore, begins in the vaginal portion of the uterus, a tenaculum easily tears out of it, which it will not do out of a chronically inflamed cervix. Carcinomatous tissue is easily curettable, while the tissue of chronic inflammation is more resistant.

With reference to the operation presenting the best prognosis, Bäcker declares himself heartily in favor of vaginal hysterectomy. He admits that the high amputation advocated by Schroeder has a slightly smaller mortality—an advantage which is completely over-balanced by the fact that "a recurrence is more likely to follow this operation than that of total extirpation of the uterus. The author expresses himself as strongly against any radical operation in cases where the disease has progressed beyond the uterus itself.

THERAPEUTIC NOTES.

A Gargle for Follicular Tonsillitis.—Levy (*Journ. de Méd. de Paris*, March 14, 1897) recommends the following as a gargle for tonsillitis:

℞	Beechwood creasote	. . .	gtt. viii.
	Tincture of myrrh	aa. . .	oz. ij.
	Glycerin		
	Water	. . . . . .	oz. iv.

A Remedy for Excessive Perspiration.—In cases of excessive perspiration Krahn (*Therapeut. Monatsch.*, March, 1897) recommends the use of the tincture of salvia, twenty drops in the morning and from twenty to forty drops in the evening. It must be taken continuously for several weeks in order to obtain a permanent cure. Unfortunately this old, harmless, and cheap remedy, like many others of its class, is unknown to the present generation of physicians.

Holocain; a New Anesthetic.—Gutmann (*Deutsche Med. Wochen.*, March 11, 1897) describes the advantages and disadvantages of a new local anesthetic known as holocaïn, a drug which is soluble to the extent of 2.5 per cent. A solution of the hydrochlorate of a strength of one per cent. is bitter, of neutral reaction, and is unchanged by boiling. Three or four drops of this solution produced anesthesia in the eye of a rabbit in from one-half to two minutes, which lasted about ten minutes. Its action in the human eye is similar. Its advantages over cocain are that it more quickly produces anesthesia, and that while dilatation of the pupil often continues for twenty-four hours after the use of cocain, holocaïn has no such action. Unfortunately the subcutaneous injection of this drug is dangerous; and another disadvantage in connection with its use is the fact that it can only be sterilized in glass which does not contain alkali, otherwise numerous fine crystals are precipitated.

The Treatment of Puritus Ani.—Brocq (*Journ. de Méd. de Paris*, March 14, 1897) recommends the following treatment for itching of the anus: The patient is to apply first a soothing ointment of vaselin and oxid of zinc, and then a large quantity of the following powder, which is kept in position by absorbent cotton.

℞	Powdered camphor	. . .	2 parts.
	Oxid of zinc	. . . . .	30 parts.
	Subnitrate of bismuth	. . .	30 parts.
	Chalk	. . . . . .	40 parts.

Frequent baths with borated water or tar soap are advisable, and the introduction at night of a suppository of cocoa butter containing cocain and extract of belladonna is often a useful addition to the treatment.

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SATURDAY, MAY 15, 1897.

THE SUPERVISION OF PROSTITUTES AND THE CONTROL OF VENEREAL DISEASES.

No question is of more vital importance in the preservation and development of the human race than the control, restraint, and suppression of venereal diseases. It is so involved, however, in moral and social, as well as physiological, problems that it has ever presented most formidable obstacles to its solution. But as the chemical rays of the all-seeing sun are the best purifiers of an infected and polluted atmosphere, so is the daylight of intelligence the best clarifier of the noisome and reeking atmosphere of the social and physiological problem under discussion. Just now the British Government is interesting itself in the best method of controlling venereal diseases among the British troops in India, and much is to be learned from the information thus presented and its bearing upon the general question. According to the report of the Departmental Committee of the India Office recently submitted, there has been an alarming increase in the number of soldiers affected with venereal diseases, particularly syphilis. This subject has been the cause of a great amount of bitter discussion lately in both the medical and lay press of England, and in order to properly understand it, it is necessary to review the events of the past ten years.

A cantonment is a camp area within which troops are quartered, and which is under the special police and magisterial control of an officer commonly called the "bazaar master." He exercises certain summary powers over the residents of the cantonment, including the bazaar where the natives reside who minister to the wants of the military and their camp followers.

The so-called Indian Contagious Diseases Acts granted the bazaar master control over the prostitutes residing in the cantonment. They were regularly inspected, were forbidden to practise their profession except in certain recognized houses, and if found to be suffering from any communicable venereal trouble, were cared for in the hospitals provided. On the other hand the soldiers were forbidden to have intercourse with any unlicensed women, and if they were found suffering from gonorrhea or syphilis, an investigation was made to discover its origin. The soldier of course was treated and if it was found that he had contracted the disease "out of bounds" there was punishment as well as medicine awaiting him.

The opponents of these regulations based their objections to them chiefly on the grounds that the Government was encouraging immorality by supplying the men with prostitutes; and so much popular feeling along this line developed that in 1888 by a vote in the House of Commons the government of India was denied power to frame police or sanitary regulations regarding venereal diseases in cantonment areas.

Since that time matters have not improved, and during the last few years there has been an alarming increase in the number of men incapacitated on account of these maladies. The Army Medical Report for 1895 in reference to this subject stated that there were constantly sick from all venereal diseases taken together, more than 3000 out of the 70,000 British troops in India; while the indirect effects in the way of broken-down health, and dissemination of disease throughout England by returning soldiers was incalculable.

Last November the India Office appointed a departmental committee to investigate the whole subject; and the report of this committee, made public March 20th, arraigns in the most scathing terms the present policy of the government.

"The present condition of the army in India, yearly sending home thousands of men infected with constitutional taint, is a great and growing source of danger to the whole community. The influence it is liable to exert upon the health of the home population is one of the gravest aspects of the whole question. . . . Among 5882 men detailed for field service with the Chitral Relief Force, 462, or nearly eight per cent., had to be rejected, owing to disease; 279 more, or an additional four and a half per cent., had to be transferred from the field hospitals to the base. According to this ratio, 8800 men, out of a total force of 71,031 British soldiers in India, would have to be put down as useless. . . .

"It is known that among the majority of European armies special regulations are enforced in combating venereal disease. The British army in India is an exception. The ratio per 1000 strength of men incapacitated in the German army is 27.3; in the Russian, 43; in the French, 43.8. What is the ratio in our own army? It is 203.7 at home and 438.1 in India. Comment is surely superfluous. This deplorable state of things does not appear to be attributable to general causes, but to one cause alone, namely, the sexual act. Drunkenness and crime have greatly diminished. More care than ever is taken of soldiers in the way of recreation, cleanliness, and the encouragement of athletic and manly sports. The hard fact remains that among a body of men, mostly very young, and nearly all obliged by the conditions of the service to remain unmarried, only a few can resist such temptations as are offered to them, with the results that have been hinted at in the preceding paragraphs."

In Netley Hospital, to which the soldiers are assigned upon their return from India, the report says that "out of 263 cases, 196, or seventy-four per cent., had a history of syphilis. Never have so many or so bad cases of this disease been sent home as during the last five years. . . . Not a few are time-expired, but cannot be discharged in their present condition, incapacitated as they are to earn their livelihood, and in a condition so repulsive that they could not mix with their fellow-men. . . . They remain at Netley, in increasing numbers, which, as matters now are, seem likely to continue to increase."

Even in the light of these terrible disclosures, opinion is divided as to the course the Government ought to pursue, and there will evidently be bitter opposition on the part of medical men as well as others to the reestablishment of the Contagious Diseases Act either in their previous or any other form. Aside from the sentimental objection already referred to, it is claimed that in this case protection does not protect. Not only in the English army during the period when there was official regulation was there far too much venereal disease, but at the present time in France and Germany, where police license and inspection is more thorough, the number of civilians and military who contract disease is sufficiently great to give the opponents of the Act a very good supply of ammunition. They quote a number of recognized authorities to prove the unreliability of the most thorough inspection of prostitutes. Potten for instance says that, at least five times out of six, soldiers contract syphilis from registered and periodically inspected women; and Diday records a case in which the son of an eminent statesman contracted the disease from a highly placed courtesan whom he had pronounced free from every taint after a most thorough examination made by himself at her request.

The trouble with this testimony, however, as appears at first glance, is that it offers no comparison with what would have taken place without any inspection. It is as if a man built a roof of leaky boards, and his neighbor urged him to remove it on the ground that it allowed much water to come through, forgetting that for every pint which finds its way between the chinks some gallons are tumbled off onto the ground. Of course, if the neighbor had an absolutely water-tight roof to offer, that would be another story. In the present instance, the opponents of the Contagious Diseases Act have apparently nothing better to advocate. What seems like a way out of the difficulty, and some suggestions which are applicable to the general question will be given in a later editorial.

THE FINAL ANTITOXIN REPORT.

In another column of this issue may be found the supplementary and final report of the committee appointed by the American Pediatric Association to investigate the efficiency of diphtheria antitoxin. The conclusions deduced by this committee have been sanctioned by the Association and are now given to the world with the full weight of its approval and authority. But that the most critical skeptic shall be disarmed, the methods of this investigation have also been presented in detail.

The solution of two crucial questions has been undertaken. Upon the answers given the claims of antitoxin have been allowed to stand or fall: "(1) What percentage of cases of laryngeal diphtheria recover without operation under antitoxin treatment? (2) What percentage of cases subjected to operation recover?"

It is proven by the committee's report that in eighty-two per cent. of non-operated cases the patients recovered under the serum treatment, the average percentage of recoveries in the pre-antitoxin period being ten per cent. To apply even a severer test, let us take the children under two years of age, in which class of patients laryngeal diphtheria is confessedly so dangerous that a mortality approximating one hundred per cent. was formerly regarded as not unusual. Under antitoxin in 356 of these cases only 102 patients were lost, a mortality of less than thirty per cent. With no other evidence than is contained in this statement the most stubborn objector must be convinced.

The investigation of operated cases is equally gratifying; nearly seventy-three per cent. recovered.

A most encouraging feature developed by the committee, but not mentioned in its report, is the fact that 1700 cases of laryngeal croup were treated with the remedy during eleven months. This goes to show how strong a hold serumtherapy has taken upon the minds of earnest physicians throughout America.

A very practical suggestion is offered by the committee when a sufficiently potent dose is recommended. As with all untried remedies, the early use of diphtheria antitoxin was very properly tempered by a spirit of caution, but since a purer and more concentrated product is now furnished, experience would suggest a larger and more efficient dosage.

The highest commendation should be accorded the American Pediatric Association for so peristently adding line upon line and precept upon precept until a verdict of *proved* has been established beyond peradventure. The final word has been spoken—a fact is before us.

ECHOES AND NEWS.

The American Climatological Association.—The following officers have been elected for 1898: President, Dr. E. O. Otis, Boston; Vice-presidents, Dr. Beverly Robinson New York, and Dr. C. F. McGahan, Aiken, S. C.; secretary and treasurer, Dr. Guy Hinsdale, Philadelphia. The next meeting will be held in the White Mountains, New Hampshire, in 1898.

The New Hampshire State Medical Society.—This Society will hold its one hundred and sixth annual meeting at Concord, May 24 and 25, 1897.

Wearing of Corsets Forbidden.—A fact worth recording is that the female employees of many German factories are forbidden to wear corsets during working hours.

The Prevalence of Diabetes.—The statistics of this disease show that it is steadily and rapidly increasing in all the great cities of Europe. This is another of the penalties of advanced civilization.

California State Medical Association.—At the meeting of this flourishing organization, at San Francisco, on April 22d, Dr. C. L. Bard of Ventura was unanimously elected president for the ensuing year.

The American Medical Editors Association—This Association will hold its next regular annual meeting at the Aldine Hotel, Philadelphia, June 1st. The dinner will occur at the same place in the evening of the same day.

British Charity in Jubilee Year.—The Prince of Wales' hospital fund was confidently expected to reach the magnificent total of £3,000,000, which would just cover, in the income it would produce, the annual deficit of the London hospitals. No figures have yet been printed, but there is no longer any talk of millions. There is doubt if £250,000 will be raised.

Membership in the American Medical Association.—There still seems to be some misunderstanding as to the proper means of becoming a member of the American Medical Association. The rules of the American Medical Association show that each person who expects recognition should come armed with a certificate of membership in his State or County society. No person presenting himself for registration will be accepted if he has not such a certificate.

The Wisdom of Government Officials. — The *Press and Circular* records that Mr. Hankin recently left Bombay, the seat of the plague—for Agra, taking with him all his bacteriologic specimens of the disease, and a certain number of mice for experimental purposes. No sooner was his arrival announced than a government official was sent to him with orders to seize all his specimens and burn them, and everything was ruthlessly cremated. How wise are the ways of some officials!

Alleged Drug Counterfeiters Detected.—It is reported from Chicago that the grand jury has indicted three men, one of them a physician of that city, on the charge of conspiracy, counterfeiting labels, and obtaining money under false pretenses in connection with the manufacture and sale of bogus drugs. The remedy counterfeited is made in Paris. The bottles were obtained through one Dumont. Over twenty Chicago druggists are implicated, and sensational developments are expected.

Notes Concerning the British Medical Association.—Dr. Charles Richet has been nominated as the official representative of the Faculty of Medicine of Paris at the Montreal meeting.—During the past week most of the American invitations have been sent out and received.—The citizens of Montreal are planning most liberal entertainment for the Association and its guests.—The New England Traffic Association offers to guests of the Association the usual reduction in railroad fares upon presentation of certificates.

A May Vaccination Bee.—The Italian mothers believe that May is the best time to have their children vaccinated. Accordingly, there were 1500 mothers carrying babies in their arms, and about a thousand children clinging to their mother's skirts assembled at the office of the New York Board of Health one day last week. Five doctors were busy all day in the free vaccinating bureau, but they succeeded in vaccinating only 620 babies. During the week the staff vaccinated over three thousand children.

Mr. Lawson Tait Ill.—It is reported that Mr. Tait, while operating upon a patient April 12th, was seized with violent pain in the neck of the bladder, followed by dribbling of urine. The symptoms were found to be due to an impacted calculus. A perineal incision was made and the calculus reached and successful removed. The operation was performed by Mr. Gilbert Barling, assisted by Mr. Christopher Martin. With the exception of some depression, due to the severe and protracted pain, Mr. Tait is making a speedy recovery.

The Medical College of Alabama.—The annual commencement of the Medical College of Alabama took place at Mobile on the evening of April 9th, and was of particular interest from the fact that the union between this institution and the University of Alabama was then formally ratified. The university has had a long and honorable career, having been founded in 1827, and the college, which was organized in 1860, numbers many of the most eminent practitioners of the South among its alumni. This union of forces will redound to the advantage and usefulness of both, and is another indication of the general trend of effort in different portions of the country to concentrate means and abilities toward the attainment of higher education.

Infection from Public Baths.—Professor Baginsky has been investigating the condition of the water in some of the public baths of Berlin, and has found a very large increase in the number of bacteria after a considerable number of people had bathed. After twelve hours, when two hundred persons had used the bath, the water contained 90,000 germs per cubic centimeter; while, after twenty-four hours, when 549 persons had bathed, the germs amounted to 270,000 per cubic centimeter. The microbes found showed the filthy nature of the pollution, and were suggestive of the danger of acquiring typhoid fever by the swimmers swallowing any of the water. This emphasizes the superiority of the spray or douch bath for a working-class community.

The Medical Sentinel, Dr. Kiernan, and the Virginia Medical Semi-Monthly.—*The Virginia Medical Semi-Monthly*, in a recent issue gives the MEDICAL NEWS credit for having said that Dr. J. B. Kiernan, of Chicago, had recently severed his editorial connection with the *Medical Sentinal*. The *Medical Sentinel*, and there is no other medical journal by this name in the world, is published at Portland, Ore., and is now in its fifth year. As the editor, Dr. Henry W. Coe is also its owner, it is safe to say that there has been no conflict between editorial and other departments, relative to the policy of that journal. Dr. Kiernan has never had any connection, editorial or otherwise, with the *Medical Sentinel*, and Editor Edwards has gotten things mixed by quoting the MEDICAL NEWS in the manner he did.

Professor Charles F. Chandler Resigns.—Professor Chandler has resigned his positions as Professor of Chemistry in the College of Physicians and Surgeons of New York and as Dean of the School of Mines of Columbia University. His reason for giving up the two positions is that he may be able to devote his whole time to the professorship of chemistry at Columbia. At the close of Professor Chandler's farewell lecture to the students of chemistry at the College of Physicians and Surgeons, May 7th, a testimonial of the esteem in which he is held by the students was given him in the shape of a loving-cup, subscribed for by those who have attended his lectures. The professor's desk was covered with roses, and the platform had also been ornamented with flags and other decorations.

Bulletin of the Iowa State Board of Health.—The Iowa Board of Health deals out advice on health topics in a truly paternal manner. "Spring is here," the board says in a recent bulletin, "and soon the flies will be on hand and demand house-room and feed." They should be given neither. They come from filthy places with their legs covered with morbific matter "and crawl over the bread and sugar and fruit and cake and pie," depositing thereon bacteria of the most poisonous kind. Therefore, in the words of the board, "decency and a due respect for health suggest that money spent for screens, for doors and windows, and for sticky fly-paper is money well spent." Another spring suggestion by the board is the eating of lemons, for therapeutic, esthetic, and sanitary reasons. On this point the board makes an ingenious appeal to the women. "Scarcely anything is better for the complexion," it says, "than a good healthy action of the liver and stomach." Summed up, the advice of the board to women is to discard veils and buy lemons.—*New York Times.*

Cooking Schools for Marine Cooks.—The suffering caused by scurvy among the crew of the ship T. F. Oakes, which recently arrived in this port, calls attention to the establishment in England of cookery schools, devoted exclusively to the training of marine cooks. A. Quinlan, instructor of the Seaman Cookery School of Liverpool, refers, in a recent communication to the *Epicure*, to the fact that on ships provided with certificated graduates from the institution named no cases of scurvy ever occur. The pupils are taught how to make fresh food out of the saltest of meats, and to concoct appetizing dishes from all sorts of ship's stores. Mr. Quinlan instances the case of the ship Holt's Hill, which carried one of his certificated cooks. This vessel made a voyage around the world, and not a single case of illness occurred among the crew. Usually on English ships that make long voyages desertions are many on account of insufficient and improperly prepared food; but on the Holt's Hill the original crew remained from the beginning to the end of the voyage. This is looked upon as a phenomenal record.

Annual Commencement of the Medical Department of the New York University.—At the fifty-sixth annual commencement of the Medical Department of the New York University, held in Carnegie Hall, May 4th, Chancellor MacCracken made an announcement about the combined University Bellevue Hospital School of Medicine, which, he said, would be open October 2d. The faculty will be appointed next week or the week after. The new handbook will be published about June 1st, and will contain full information about new buildings and new appliances for the reorganized school. The Mott medals were awarded as follows: Gold medal, C. F. S. Whitney; silver, Ralph J. Hess; bronze, Aaron Denenholz. The first money prize of $200 was won by John Howland; the second, $100, by E. N. Bowen; the third, $50, by Isaac Zarch. The honor men were named in the following order: John Howland, E. N. Bowen, Isaac Zarch, S. T. Quinn and J. J. Moorehead. The prizes in the competitive examinations for hospital appointments were awarded to B. L. Wilson, J. J. Nutt, S. D. Dice, A. H. Mandell, Jr., P. B. Davenport and T. E. Berry. Other hospital appointments were awarded to T. B. Barrington, Jr., L. V. Waldron, Frederick Rustin, John Howland, F. J. Tooker, A. S. Englehart, W. M Stone, W. G. Schoonmaker, D. L. Morrison, Stewart Lewis, E. N. Bowen, M. I. Blank, L. Harris, W. M. Spitzer, H. H. Wilson, and William Menger.

CORRESPONDENCE.

STERCORIN VERSUS KOPROSTERIN.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In the NEWS for May 1st, R. H. Chittenden, Ph.D., of New Haven, Professor of Physiological Chemistry in Yale University, in an article on "The Chemistry of Gall-Stones, with Special Reference to their Mode of Origin," read before the New York Academy of Medicine, April 15, 1897, says:

"As just stated, cholesterin is not readily decomposed, but in the case of man, according to the recent experiments of Bondzynski and Humnicki (*Uber das Schicksal des Cholesterins in thierischen Organismus, Zeitschr. f. physiol. Chem.* Band 22, p. 396), a portion of the substance undergoes modification in the intestine, appearing in the feces as koprosterin, a body closely related to cholesterin, and apparently formed from it by the addition of hydrogen."

In *The American Journal of the Medical Sciences* for October, 1862, is an article by me entitled "Experimental Researches into a New Excretory Function of the Liver, Consisting in the Removal of Cholesterin from the Blood, and its Discharge from the Body in the form of Stercorin." The sterecorin which I discovered in the feces in 1862 is identical with the "koprosterin" recently described. My methods for the extraction of stercorin from the human feces are practically identical with the methods recently employed in the extraction of "koprosterin." I proved that stercorin is derived from the cholesterin of the bile. Within the last few months I have repeated my observations of 1862, and have carried on side by side with them the manipulations employed by Bondzynski and Humnicki, with exactly the same results. I have compared specimens of "koprosterin" obtained by the recent methods with specimens of stercorin obtained in 1862, and have found the two substances identical.

While it is a matter of some surprise that Bondzynski and Humnicki should be ignorant of the existence of stercorin, it is a matter of greater surprise that an American physiological chemist, so prompt to accept observations made in Germany, should ignore stercorin, a name to be found in English, French, and German literature since 1862. Yours truly,

AUSTIN FLINT, M.D.

60 EAST 34TH ST., NEW YORK,
May 1, 1897.

OUR PHILADELPHIA LETTER.

From our Special Correspondent.]

THE INCREASE OF MALARIA—MEDICAL INSPECTORS FOR THE PUBLIC SCHOOLS—COMMENCEMENT AT THE JEFFERSON AND MEDICO-CHIRURGICAL COLLEGES—AMERICAN PUBLIC HEALTH ASSOCIATION—PHILADELPHIA COUNTY MEDICAL SOCIETY—THE SOCIAL SIDE OF THE AMERICAN MEDICAL ASSOCIATION'S MEETING.

PHILADELPHIA, May 8, 1897.

THE increasing prevalence of malarial fever in Philadelphia during the last year or two has occasioned no little comment among practitioners, as of recent years instances of paludism in this city have been more often the exception than the rule. The records of most of the large hospitals also bear witness to the growing frequency of this disease, and the fact that the increase in malaria has not been among those who have recently arrived here from malarious districts, but in natives of the city, argues against the importation of the disease by immigration, and demonstrates its local origin.

The sanitary condition of the Philadelphia public schools has, for a long time, been a subject of great dissatisfaction to those interested in the health of the community, and the deplorably unhealthy state of many of the school buildings, fully set forth in a recent official report on the subject, has actuated a movement led by Dr. W. W. Keen, to have the Board of Health insist on a daily medical inspection of the school children of this city, similar to that now in effect in New York and elsewhere. To get at the root of the evil by extensive reconstruction of many of the school buildings is, of course, too much to ask at present, so that Dr. Keen's suggestion, which will at least limit the spread of contagious diseases, should be made an important step forward in our municipal hygeine.

The commencement exercises of the Class of '97 of the Jefferson Medical College will be held on May 14th. Professor E. E. Montgomery will deliver the valedictory address, and there is also to be an oration to the class by Rev. Francis L. Patton, the president of Princeton University.

The graduating exercises of the present year's class at the Medico-Chirurgical College will take place on May 18th.

From a perusal of the preliminary announcement of the program of the meeting of the American Public Health Association to be held in this city on October 26th, 27th, 28th and 29th, it is evident that the coming meeting will prove one of the most important sessions ever held by the Association. Among the large number of topics listed for discussion the more prominent are those relating to the cause and prevention of infant mortality, to the pollution of water supplies, and to the subject of public health legislation, while an important consideration of the questions of the nomenclature of disease and forms of statistics is to be a leading feature of the meeting. Dr. Benjamin Lee, No. 1532 Pine street, Philadelphia, is the chairman of the local committee on arrangements.

At the stated meeting of the Philadelphia County Medical Society, held on April 28th, Dr. Orville Horwitz presented "An Inquiry into the Cause for the High Mortality Resulting from Suprapubic Cystotomy," in which he reviewed the statistics relating to this operative procedure, and showed that it was attended by a mortality which varied from thirteen to thirty-three per cent. Dr. Horwitz then quoted seventy cases, ranging in age from three to seventy-five years, upon which he had performed this operation, with but one death resulting, and dwelt particularly upon the proper preparation of the patient, and upon a perfect technic as important factors of a lower death rate. From his experience, he concluded that the high mortality in the hands of other operators was due, among other causes, to extensive and unnecessary dissection of the prevesical tissues; to injury to the peritoneum by the use of the knife after dividing the sheath of the recti muscles; to loss of time in exposing the bladder, after anesthesia had been effected, and a want of knowledge after exposure of the bladder as to whether the viscus was free from the peritoneal fold; and to over-distention of the bladder and of the rectal bag.

Dr. A. Graham Reed read a paper on "The Hot-Air Treatment for Rheumatism and Gout," and drew inferences concerning this means of therapeusis agreeing with the opinions already expressed before the Society by Drs. H. A. Hare and J. C. Wilson, the latter of whom, it will be remembered, long since introduced the treatment in this city, and has successfully and widely employed it in a large number of cases.

Aside from the scientific interests which attach to next month's meeting in this city of the American Medical Association, the visiting members will find that their time will be largely taken up with the numerous engagements of a social nature, which have been planned for their entertainment.

On the first day of the meeting, June 1st, they will be entertained at lunches given by the Philadelphia County Medical Society at the Hotel Walton; by the Laryngological Section, at the Howard Hospital; and by the trustees and faculty of the Philadelphia Polyclinic, at their hospital building. In the evening dinners will be given at the Hotel Walton by the Sections on Surgery and Anatomy, Diseases of Children, Neurology and Medical Jurisprudence, Materia Medica and Pharmacy, Dermatology and Syphilography, Obstetrics and Diseases of Women, and Ophthalmology, Laryngology, and Otology; and at the Aldine Hotel by the Section on Practice of Medicine.

On the second day, June 2d, there are to be lunches by the University of Pennsylvania, at Houston Hall, and by the publishers, The J. B. Lippincott Company, at the Union League Club. In the evening receptions will be given by the Jefferson Medical College, at the Academy of the Fine Arts; by the University of Pennsylvania, at the Union League Club; by the Medico-Chirurgical College, at the hospital of this institution; by the Women's Medical College, at their hospital; and by Dr. J. V. Shoemaker, at his residence.

On the third day of the session, June 3d, the following lunches will be given: By Dr. W. W. Keen, to the Surgical Section, at the Hotel Walton; by Dr. J. H. Musser, to the Section on Practice of Medicine, at Houston Hall; and by Dr. L. Webster Fox, to the Section on Ophthalmology, at the Hotel Bellevue. In the evening a large theatre party will be tendered the members of the Association by the medical publishing firm of Lea Brothers & Company.

On the fourth day, June 4th, the Philadelphia Medical Club will entertain the visitors at luncheon at the Aldine Hotel.

In addition to the above arrangements, a large number of Philadelphia clubs will keep open house for the visiting members, and the physicians of Atlantic City are making elaborate plans for the entertainment of those who are inclined to take the hour's ride to that seaside metropolis.

TRANSACTIONS OF FOREIGN SOCIETIES.

Vienna.

AN ENDEMIC HICCOUGH OCCURRING IN A YOUNG LADIES' SEMINARY — RESECTION OF THE GALL-BLADDER AND A PORTION OF THE LIVER FOR CARCINOMA—THE ANCIENT AND MODERN TREATMENT OF GOUT—REMARKABLE CASE OF HEMATEMESIS IN A HYSTERICAL WOMAN.

BERDACH reported to the Imperio-Royal Society of Physicians, at the session held March 12th, *an endemic hiccough occurring in a young ladies' seminary.* Sixteen out of the thirty-five scholars were attacked in one week.

The neurosis was undoubtedly of a hysterical nature. The first child attacked had well-marked symptoms of hysteria, and the second case was ushered in by a hystero-epileptic attack. According to Charcot, such attacks occur most frequently in anemic young girls, and are very apt to recur. The hiccough cannot be stopped voluntarily, but it ceases entirely in sleep. The children were at once removed from school, and seven recovered almost immediately. The prognosis in the other cases was thought to be good.

ULLMANN presented a patient from whom, six months previously, he had *removed the gall-bladder and a portion of the liver substance for carcinoma.* Although the resection was made with a Paquelin cautery the hemorrhage was troublesome, and was only stopped by suturing together the sides of the wound in the liver. This is the fourth case of carcinoma of the liver which has been treated surgically.

At the session of March 26th, **LORENZ** showed a number of patients to illustrate his *treatment of bony ankylosis of the hip-joint.* If the these cases are unilateral and the femur is ankylosed in a favorable position the patients can do very well without an operation. In those cases in which ankylosis has occurred with the limb in a bad position, or in which both sides are affected, Lorenz has performed with marked success linear osteotomy at the plane of ankylosis, following the operation with gymnastic treatment. In one young woman, aged twenty-two, absolute ankylosis had existed in both hip-joints. Locomotion was due before the operation only to a sort of tripping from the extreme points of the toes, made possible by the slight degree of motion in the symphysis, and the sacro-iliac synchrondroses. There had also been numerous attacks of osteomyelitis in various parts of the body. When the region of the joint was exposed it was found that its place had been taken, apparently, by a hugh bony tumor, so that a linear osteotomy alone would not suffice. Great masses of newly formed bone were removed and the surfaces of the femur and pelvis were separated. The wound healed promptly and gymnastic exercises were begun in six weeks. When presented, the patient possessed the ability to flex and extend the thigh through an arc of thirty degrees. Abduction was possible to fifteen degrees. In ordinary cases of linear osteotomy the patient should remain in bed not more than eight days, and should begin at once to go about with an apparatus devised for coxitis.

At the session of the College of Medicine, held March 15th, **STERNBERG** discussed the *ancient and modern treatment of gout.* As far back as Hippocrates moderation in quality and quantity of food was strongly urged. Upon this point, and this point alone, are clinicians to-day agreed. The treatment comprises four subjects, *viz.:* diet, alkalies, specific remedies, and mechanical therapeutics. Upon every one of these points opinions vary widely. Pfeifer recommends a purely meat diet. The French authors object to soup because meat extracts are poisonous to the kidneys. A milk diet is suitable in only a small number of cases, as many patients with gout bear it very badly. Some physicians forbid their patients to eat sour articles of food, while others recommend fruit cures (strawberries, cherries, etc.). All agree that alcohol is injurious.

Of the alkalies, lithia is not very soluble, and, moreover, it upsets the digestion and accomplishes little good. Von Noorden recently advised the use of calcium carbonate. The only objection to its use is the possible formation of intestinal concretions, and this can be overcome by the use of laxatives. The phosphoric acid which is abstracted from the urine by the calcium is eliminated in the intestine, and the sodium acid phosphate in the urine is increased by just that amount which favors the solution of uric acid. Instead of the already forgotten ammonium compounds, modern therapy has found similar preparations with amin bases; for example, urotropin and piperazin. All of these substances are irritating to the stomach.

In the discussion which followed the reading of this paper it was evident that the members of the society expect more benefit to follow treatment by baths of various kinds, friction of the skin, and massage, than from any internal remedies.

ZAPPERT presented to the Medical Club, March 10th, a case of *juvenile progressive paralysis* existing for two years in a girl aged thirteen. The trouble began with difficulty in walking, followed by psychic disturbances. The child suffered besides from hereditary syphilis. It has been recently shown that of forty-one cases of progressive paralysis eighty-seven per cent. were victims of hereditary syphilis.

At the session of March 24th **LEDERER** related the history of a *remarkable case of hematemesis in a hysterical woman,* who lost in the course of one month more than thirteen liters (quarts) of blood, five liters being lost in four days without producing unconsciousness. The hemorrhages occurred not only from the stomach, but also in the secretions and excretions, even in the secretions of the breasts. This woman had taken in the six months preceding these hemorrhages two hundred grams (seven ounces) of paraldehyde. It was suggested that this may have been the cause of the bleeding.

As a result of his researches, **HERZ** concludes that a *comparative insufficiency of the ileocecal valve* exists when, in the cadaver, it does not resist a pressure of at least twenty centimeters of water (eight inches). If the valve is well formed it will resist enough pressure to burst the colon. Incompetent valves are frequent in alcoholic subjects and those who suffer from diseases of the heart or chronic diseases of the large intestine. Upon the living, insufficiency of the valve can be demonstrated by pressing the edge of the left hand against the ascending colon, and squeezing the cecum with the right. If insufficiency exists, gas and fluids will be forced back into the ileum with a gurgle, and the percussion note over the cecum and ileum will be changed.

Constipation may be the result as well as the cause of the affection, because the large intestine empties itself more like the bladder than by peristaltic action, and if it communicates freely with the small intestine this action is greatly interfered with. Massage of the large intestine is more efficacious than purgatives and disinfectants, because it attacks the source of the trouble, while these are only palliative.

SINGER was inclined to doubt the possibility of making a diagnosis of incompetency of the ileocecal valve by palpation combined with percussion. He suggested insufflation of air as a better means of making the diagnosis.

SOCIETY PROCEEDINGS.

CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Fourth Triennial Session, Held at Washington, D. C., May 4, 5, and 6, 1897.

[Specially reported for the MEDICAL NEWS.]

GENERAL SESSION.

(Continued from page 611.)

THIRD DAY—MAY 6TH.

THE meeting was held under the direction of the American Orthopedic Association. The subject for discussion was

DEFORMITIES OF THE HIP-JOINT, ESPECIALLY CONGENITAL DISLOCATIONS.

The first paper was read by DR. E. H. BRADFORD of Boston. He said that it will be satisfactory to the profession at large to learn that an affliction which for centuries has defied all surgical efforts may at last be regarded as curable under the efforts of scientific surgery. Without taking time to review the history of the subject, he said that the world was greatly indebted to the efforts of Hoffa and Lorenz. An accurate knowledge of the pathologic anatomy, fortunately now well understood, is important. The etiology, however, is not known, although it is clear that true congenital dislocation is an affection of intra-uterine life. It would seem that it is not, like harelip, a defect of development, but, like congenital clubfoot, a malposition of the bones, with resulting changes in the soft parts, The speaker then reviewed, with the the aid of diagrams thrown upon a screen, the various theories in regard to the etiology, pathology, diagnosis, and treatment, with results. The following conclusions were presented:

Congenital dislocation of the hip is a dislocation of the head of the femur upward occurring during intra-uterine life. A shallow triangular acetabulum results. A diminution of the angle between the neck and shaft takes place and a twisting of the neck. The capsule is altered by being stretched and thickened; it is first dilated in its upper portion, stretched across the acetabulum in the lower portion, and constricted at the rim of the acetabulum. The most important obstacle to reduction lies in the attachment of the capsule at one end to the ilium above and around the acetabulum and to the anterior surface of the femur, especially to the lesser trochanter. The shortened pelvic femoral muscles also offer a resistance to the reduction and with the contracted capsule will prevent reduction or cause relapse. Obstacles to the reduction also lie in the shape of the head and in the shallowness of the acetabulum. Traction in an outward direction cannot effect a cure. Traction in a strong abduction with downward pressure upon the head may bring about reduction. In children over two and under five—in some instances between five and seven—under an anesthetic, forcible reduction can be employed. This can be done only if the head of the femur is forced through the capsular neck into the acetabulum and only after the capsular attachments adducting and flexing the limb are thoroughly stretched. Successful reduction is always accompanied by an audible movement of the head of the femur into the capsule, and bandages and fixation apparatus are to be used to prevent relapse until the contracted tissues are sufficiently long and the pelvic trochanter muscles have regained their power to a sufficient extent that a a recurrence of dislocation is impossible. In patients older than seven and under fifteen, and in some cases between five and seven, an open incision is necessary for reduction of the dislocation. Subcutaneous incision is useless. The line of incision following the outer edge of the tensor vaginæ femoris is preferable. Inability to reduce the head is due to capsular attachments from the acetabulum and ilium to the femur which have not yet been divided or stretched. In adolescents or adults, where extension of altogether new bone takes place, operative reduction has not been successful. The use of corsets and traction splints may improve attitude, but cannot cure.

DISCUSSION.

DR. V. P. GIBNEY of New York in opening the discussion, expressed embarrassment at speaking on this subject in the presence of Dr. Bradford, who had given so lucid a demonstration. He desired, however, to say something about the ultimate results in the cases operated upon and those not operated upon. He had seen six or eight of these cases a year during the last decade or more, but only within the past six or seven years had he made any attempt to carry out methodical treatment. When the method of Hoffa was first introduced, he began using the appliances, and he thought he obtained some good results, but he had not had enough cases to warrant too positive statements in regard to the method. If the operation is to be undertaken, he thought that the preliminary stretching referred to by Dr. Bradford is very essential. Cases in which he had used it had turned out best. He had encountered less difficulty in getting the head of the bone into the acetabulum in these cases, and they had gotten well without suppuration. This unfortunate accident will occasionally occur. He was sure that even Lorenz, judging from his own reports, had met with suppuration in some cases. This has not led him to adopt another method, however, but he has modified the original one. He claims that by this non-bloody method, if he has not a sufficiently deep acetabulum, by causing the patient to walk on the limb early, the head of the femur will force itself into the acetabulum.

DR. HARRY M. SHERMAN of San Francisco spoke first of what he had himself seen Lorenz do by his operation for reposition. His recollection differed somewhat from what had been presented by the essayist, but he admitted that the difference may have arisen from improvements adopted by Lorenz since he saw him operate. He had thought that the incision was anterior to the line of the tensor vaginæ femoris. He stated that after the operation the limb was put up in plaster-of-Paris, in a flexed and strongly abducted position, and kept so for six weeks, portions of the plaster being now and then removed until at the end of six weeks the child was permitted to walk. Another point of importance in the Lorenz method is the fact that this operator never abandons a case, but applies massage and requires the patient to work in his gymnasium at the earliest moment that is safe.

The Congress then passed under the direction of the American Surgical Association, the subject for discussion being

THE CLASSIFICATION OF ACUTE GENERAL PERITONITIS: THE PROGNOSIS AND TREATMENT OF THE DIFFERENT VARIETIES.

The subject of

THE CLASSIFICATION OF ACUTE PERITONITIS

was presented in an exhaustive review of the various forms of the disease, classified according to etiology and pathology, and clinically, by Dr. N. SENN of Chicago. (An abstract of this paper was published in the last issue of the NEWS.)

The subject of

THE PROGNOSIS AND TREATMENT OF THE DIFFERENT VARIETIES OF PERITONITIS

was presented in a paper by DR. ROBERT ABBE of New York, which will appear in the next issue of the NEWS.

DR. ANDREW J. MCCOSH of New York then opened the discussion of the papers. He first expressed regret that Dr. Senn had not given a more practical and less elaborate classification of the disease, but admitted that such a classification was impossible if Dr. Senn was unable to give it. He then asked several questions regarding varieties of the disease which were close in resemblance.

In regard to prognosis, he had little to say, except to agree with Dr. Abbe, that the duration of the disease had much to do with the outcome of the case. Another factor is the varying resisting power of different patients. Age and habits are also important factors. Patients with a diseased liver or disabled kidneys are very susceptible to septic infection. All his patients that recovered were under thirty-five years of age, and he did not recollect a case of a patient over forty-five years old that had recovered. He thought it must be difficult to decide at the time of operation between those cases which need simple cleansing and those which need thorough irrigation. In some of the most virulent cases the evidences of septic infection are but little marked, whereas, in the milder cases, the evidences are sometimes much more decided. He thought it better at the time of operation to consider every case as one of the severest grade of the disease, and to so treat it. Therefore, if the best method of treating the peritoneal cavity is by irrigation, we should adopt that method in preference to swabbing or scrubbing. By the latter process the endothelium must be damaged, its vitality diminished, and its resistance to infection impaired. He believed in complete irrigation. A free incision should be made in these operations, the patient being turned upon the side and the intestines being entirely removed from the cavity. It is also of the greatest importance that the intestinal and peritoneal surfaces be kept hot. The coils of gut are received into the hands of assistants, and covered by towels which have been wrung out in water as hot as can be borne. Glassful after glassful of hot salt solution is poured over and through them at the same time that a large hose from a glass reservoir is pouring the same solution into the cavity. The irrigating fluid should be a sterile, normal, salt solution. It is of importance to let a certain amount of the same fluid remain behind in the peritoneal cavity. It acts as an immediate heart stimulant, and increases intestinal drainage and the passage of septic matter out of the abdominal cavity. The bactericidal power of the peritoneal fluid is increased by it. Of course, the peritoneal cavity should be thoroughly cleansed. It is important to remove as much of the septic material as possible, and to dilute what remains with the sterile fluid.

Another point of importance is in regard to the respective advantages of opium and of catharsis. There is an inclination at present toward the use of opium in full doses, and a tendency to discourage the use of cathartics. The speaker was entirely opposed to this change, however, and believed that treatment by opium was the worst that we could adopt in cases of general septic peritonitis. It is, of course, indicated in cases of idiopathic or local peritonitis, when we wish to confine the inflammation to a small area. He thought that every method should be employed to restore to the intestines their peristaltic action. Everything should be done to favor intestinal drainage, and to prevent distention and thinning of the walls of the gut and stagnation of blood, and to prevent the escape of the colon bacillus out of the intestine. Much difficulty arises here in the inability of the patients to retain cathartics. On this account the speaker had begun to administer various cathartic substances by means of intra-intestinal injections at a high point in the small intestine. He had become so convinced of the great value of this method that he now employs it in all his cases, injecting one to two ounces of a saturated solution of magnesium sulphate into the small intestine by means of a large antitoxin syringe, the puncture being closed by a Lembert suture. He remarked further that his results had been so much superior from this method that he was forced to conclude that the saline injection has had much to do with it.

He then presented statistics of the results which he had obtained by the use of this method. He showed that between the years 1887 and 1895 his mortality had been eighty-six per cent., whereas, since the adoption of the present method in 1896, he had operated upon nine cases, with six recoveries. He believed that the early movement of the bowels was an important factor in the recovery. In some of his successful cases the prognosis had been exceedingly grave, but improvement began almost immediately after the operation, the bowels moved early, flatus disappeared, and the patient went on to a speedy recovery.

Referring to the application of heat or cold to the external surface of the abdomen, the speaker said that neither was of value, as they cannot affect the temperature of the interior more than about half a degree. Cold is, however, grateful to the patient. Drainage is of great importance. A free incision should be made and the peritoneal cavity thoroughly drained. His preference was for gauze strips running in between the coils of the intestine. The glass tube is sometimes used in addition to the gauze strips, but rubber tubes are now very seldom used. He preferred chloroform as an anesthetic in these cases. In conclusion he insisted strongly upon early operation, thorough cleansing of the peritoneal cavity, and an early restoration of peristalsis.

DR. GEORGE R. FOWLER of Brooklyn, as his contribution to the discussion of the subject, next read a paper on

PERITONITIS CONSIDERED FROM THE CLINICAL STANDPOINT (SEE PAGE 627).

DR. J. T. JOHNSTON asked that Dr. McCosh give further particulars in regard to the injection of saturated solution of magnesium sulphate into the small intestine. If it has proved such a valuable means of hastening peristaltic action, he thought it desirable that the method should be fully understood.

DR. MCCOSH replied that he administered the dose during the operation, when the intestine was exposed, and repeated what he had already said in regard to location of puncture, syringe used, and closure of the puncture by Lembert suture.

DR. WILLIAM H. WELCH, Chairman, then remarked that the question as to the existence of a chemic peritonitis is a matter that has not been entirely settled. He agreed with Dr. Senn that we would better regard cases of general peritonitis as due to the action of micro-organisms.

There are certain points in regard to the distribution of peritonitis which are of importance. In some cases of intestinal ulceration there is a limited fibrinous exudate over the surface of the ulcer which does not contain micro-organisms. This fact is interpreted to mean that the micro-organisms are the cause of the peritonitis, but only by a chemic process through the toxins which they produce. But to exclude the presence of micro-organisms in the exudate, a very painstaking examination must be made. Not only cover-slip preparations should be examined, but cultures in every case, and if possible, animals should be inoculated. There is no question, however, of the occurrence of a very limited fibrinous exudate over the area without micro-organisms. Again, there may be quite a regular distribution of organisms in a localized peritonitis, patches of exudate appearing over a considerable area. One will sometimes find occasional bacteria in the pockets of pus, but no bacteria in the area around the pocket. The distribution of the exudate gives no guarantee of the distribution of bacteria, especially in the fibrinous and serofibrinous exudates.

DR. ROBERT ABBE desired to add a word in regard to the use of antitoxin in cases of peritonitis. Notwithstanding the excellent results that have been reported, he did not think that the records would show any real benefit from its use. He had used it in three cases with what he thought were injurious results.

DR. WILLIAM H. CARMAULT moved that a vote of thanks be tendered to the Cosmos Club of Washington City for its courtesy in extending to the Congress the freedom of the club rooms during the meeting and for the "smoker" to which the members had been invited.

DR. WELCH, in declaring the Congress closed, remarked that the registration had been very creditable, over five hundred having registered, and a very large number had attended the meetings who had not enrolled their names. The program had been especially full and rich, and the general discussions had been excellent. He felt that the plan which had been adopted in preparing the program was a success, and he expressed his personal thanks to those who had taken part. The Congress was then declared closed.

AMERICAN GYNECOLOGICAL SOCIETY.

Twenty Second Annual Meeting, Held at Washington, D. C., May 4, 5, and 6, 1897.

FIRST DAY—MAY 4TH.

(Continued from page 608.)

The President, JAMES R. CHADWICK, M.D., in the Chair.

THE HISTORY AND PRESENT STATUS OF HYSTERECTOMY FOR FIBROID TUMORS OF THE UTERUS.

DR. A. PALMER DUDLEY of New York, in continuing the discussion, referred to what had been said in the paper in regard to the influence of American surgery upon the methods of performing hysterectomy in other parts of the world, and said that two years ago a foreign surgeon had visited this country and attended a meeting of the Society. A year later the speaker visited him at his home and saw him operate, and noticed that he had changed his technic to conform to that of American surgeons. In regard to the menopause having a beneficial effect upon cases of fibroid of the uterus, this is a continuation of the old idea that the menopause is a cure-all. If such were the case, then Hegar's operation would be the ideal one.

DR. W. T. LUSK of New York thought that most of the members were agreed as to the proper treatment of fibroid tumors of the uterus, and that their apparent difference of opinion might be caused by the different types of cases which they see. Personally, he had seen a large number of insignificant fibroids of the uterus, whose presence had been discovered accidentally, and which gave rise to no symptoms. He sent such patients away, telling them to be examined once a year or whenever any symptoms appeared. Where operation is necessary, he was in favor of myomectomy. In some of these cases removal of the appendages had been followed by good results. He was glad to hear advocated the partial removal of the uterus, *i.e.*, leaving the cervix. The atrophy of the parts and sinking of the pelvic contents after total extirpation are often the cause of great discomfort.

DR. T. A. REAMY of Cincinnati thought that oophorectomy in the early stages often arrested the growth of uterine fibroids, but that it was illogical and unphysiologic to believe that the menopause, whether natural or artificial, could have a curative effect in the late stages. Observations made in the dead-house show that many woman, who died from various causes, have these tumors and were not conscious of the fact. In view of one fact, therefore, that a fibroid tumor often causes no symptoms and does not grow to a large size, he was in favor of conservative treatment. If symptoms appear at any time, operation can be resorted to when necessary.

DR. BEVERLY MCMONAGLE of San Francisco was in favor of both conservative and radical treatment of these cases, according to what was meant by the former term. Conservative treatment in a woman in the childbearing period would not be conservative treatment in a woman who has passed that stage. If an old woman has a fibroid tumor which, by reason of its weight or by the pain it causes, brings her to us, it is our duty to remove the tumor. If the patient has passed the menopause, hysterectomy seemed to him the best treatment; in younger women, the reproductive function should be preserved whenever possible, and any operation which prevents her from bearing children is a bad operation. For this reason he was opposed to oophorectomy in these cases. Myomectomy, he considered, was the operation indicated.

DR. GEORGE J. ENGELMAN of Boston considered the technic of the operation employed less important than the condition for which it was performed. Fibroid tumors are spoken of in a general way, as if they were all alike, whereas they differ very much in character. The vast majority of these tumors are not dangerous to life, but are perfectly harmless. They are frequently found in the dead-house in working women who never suspected their presence because they caused no symptoms. In regard to the arrest of development of a tumor by the establishment of the menopause, the speaker thought this rarely happened, and that, on the contrary, the condition generally became worse.

DR. THOMAS ADDIS EMMET of New York cited the case of a young woman in whom a fibroid tumor of the uterus disappeared during pregnancy, and was afterward felt on one side and was found to be attached to an ovarian tumor, showing that these tumors can be transplanted. He had always been conservative in the treatment of cases of fibroid tumor of the uterus, and was entirely opposed to removal of the uterus for this purpose. He thought hysterectomy had been done too often, and he never performs it if it can be avoided. In many cases he had removed large uterine tumors, piece by piece, through the uterine canal, and had also removed tumors of the broad ligament by entering the cavity between the bladder and the uterus. Now that the operation of hysterectomy had been so perfected, he hoped it would be performed less often, and that the profession would devote their attention to the genesis of fibroid tumors and endeavor to prevent their formation. He was convinced that they do not develop in women whose menstrual function is properly performed. A woman whose uterus is capable of making in its lining membrane a bed for a fecundated ovum, will never have a uterine fibroid.

DR. NOBLE, in closing, said he had several objects in view when he presented the paper, one of which was to point out the difference between true conservatism which considers the interest of the patient, and false conservatism which does nothing. Another was in regard to the fallacy that the advent of the menopause cures fibroids of the uterus. Twenty-five per cent. of his cases operated upon had passed the menopause. He had removed the appendages for the arrest of these growths and some of the cases did well, but the results of myomectomy are more satisfactory. He did not consider any operation conservative in which the tubes and ovaries were removed. He referred to what had been said about recurrence after myomectomy, and said the percentage was very low.

DR. H. J. GARRIGUES of New York then read a paper, entitled

SECONDARY OPERATIONS.

The author referred to the necessity of guarding against infection while operating and the tearing of the delicate peritoneal covering of the intestines and other viscera, which would cause the formation of adhesions and make a secondary operation necessary. He reported a number of cases to illustrate his statements, one of which was that of a woman who had been subjected to seven laparatomies and might have to undergo another.

DISCUSSION.

DR. A. LAPTHORN SMITH of Montreal regretted that the author had not given the indications for reopening the abdomen when things were not going on well. He cited a case in which he opened the abdomen of a patient who had had a previous laparotomy for ventral fixation of the uterus, and had found the fundus firmly adherent. All went well until the ninth day, when the patient refused food and began to vomit. The following day there was fecal vomiting, and the abdomen was reopened. The intestine above was found very much distended and collapsed below, and in one place had become adherent to a raw spot made by tearing away adhesions, and in this way caused obstruction. The patient recovered. The case served to show the importance of covering over all raw surfaces in the peritoneal cavity.

SECOND DAY—MAY 5th.

DR. ANDREW F. CURRIER of New York read a paper, entitled

SUGGESTIONS CONCERNING VENTRAL HERNIA RESULTING FROM ABDOMINAL SECTION, AND ITS TREATMENT.

He considered ventral herniæ under three headings: (1) *simple*, (2) *multiple*, and (3) *massive*. In the first variety there is a splitting apart of the muscular fibers, the peritoneum usually remaining intact and forming a sac which, with the abdominal contents, protrudes. The rent may gradually become larger, but there is no strangulation. The intestines in the sac become bound together, but the symptoms produced are usually very slight, being merely a feeling of discomfort. In the second variety the condition is more complicated. Separation of the muscular fibers takes place not only in the middle line, but in various parts of the abdominal wall, and generally occurs in women with weak, flabby tissues and much fat. This is the rarest variety of the three, and gives rise to many symptoms, and occasionally strangulation occurs. The third variety includes cases where the hernia is the size of a child's head or larger, and is usually a result of the smaller variety. To protect the parts, Nature throws out a fibrous ring around these herniæ at the border of the tear in the muscle, and the peritoneum becomes thickened. This variety gives rise to serious symptoms, and often becomes irreducible.

The author was of the opinion that all cases of ventral hernia should be operated upon as early as possible no matter to which variety they belonged and even when they caused but little discomfort. The old wound should be refreshened and the edges of the fascia brought together. In cases of long standing, the superfluous peritoneum should be removed. In cases where the abdominal tension is great, he advocates making longitudinal incisions through the fascia. Accumulations of fat should also be dissected out. Suture of the wound is a most important point, the object being to bring the edges of the tissues together and to hold them there until union is firm. He prefers silkworm gut to any other material for this purpose. Catgut was unsafe because of its liability to become infected, and the same can be said of silk. Silkworm gut sutures can be left in for three or four weeks, after which they either become loose or cause irritation. He employs a modification of the buried suture, because of the disadvantages of the latter, and introduces it as follows: Two curved needles are threaded on the ends of a strand of silkworm gut and both are introduced just above the angle of the wound from without inward, passing through peritoneum, fascia and muscle, and are then brought out and again inserted from above downward, and so on until the lower angle of the wound is reached, in the same manner as a shoe is laced. If the wound is not more than three inches in length, one suture is sufficient; if longer than this, a second suture should be inserted beginning at the lower angle of the wound and meeting the one from above at the middle of the wound. The skin is then united by a continuous suture of the same material. To protect the skin, a thin strip of gauze is passed under each suture. The superficial sutures are removed in two weeks and the deep ones two weeks later. The patient is kept in bed for a few days after the removal of the sutures and adhesive straps are worn to protect the wound for the next week or so.

DISCUSSION.

DR. J. M. BALDY said he had employed a silk suture for uniting the peritoneum and a similar one for the fascia and silkworm gut for the skin with excellent results.

DR. A. LAPTHORN SMITH urged the importance of leaving the sutures in for a long time. Hernia following operation had become very rare in his practice since he had adopted this plan.

DR. JOSEPH TABER JOHNSON thought that any method of closing an abdominal wound which would prevent ventral hernia should be hailed with delight. Most of the methods proposed, however, seemed very cumbersome and occupied a great deal of time, and thus necessitated a long anesthesia and caused additional shock to the patient. He thought that a series of through-and-through sutures, properly introduced and near enough together, embracing a good deal of the structures and drawn together with not too much force, would secure good union.

DR. A. P. DUDLEY said that the proper way to prevent hernia was to bring the edges of the linea alba together accurately. He did not think it was possible to get good union by over-lapping the ends of the fascia. He was also opposed to any suture method which included all the structures.

DR. CURRIER closed the discussion by saying he agreed with Dr. Johnson that any method of closing an abdominal wound properly and quickly would be desirable, but did not think that the method he recommended in the paper could be called cumbersome. It was necessary to use several rows of sutures because in most of the cases it is impossible to get good union with a through-and-through suture. The disadvantage of the buried suture is that after a month it causes irritation. As to the percentage of herniæ, occurring after operation, he thought this a difficult matter for a surgeon to decide for the cases did not always return to him when a hernia developed. Many cases of ventral hernia came to him who had been operated upon by other surgeons. The speaker emphasized the fact that all of these herniæ are not caused by imperfect technic.

THE PRESIDENT then read the annual address.

He said in part: Abdominal surgery in general is the outcome of ovariotomy, so that in its early days the history of the former is included in the history of the latter. For this reason, we Americans have an additional incentive in reiterating the indisputable fact that the first operation was done on our soil by one of our own countrymen. On the continent of Europe the operation had found but little favor. In Germany the first operation was performed by Chrysmar of Isny, Württemberg, in May, 1819; but from that year till 1850 but twenty-three operations were done, with only seven recoveries. In France there was no operation until that by Dr. Woyerkowsky in 1844, and but three (with two successes) up to 1850. In 1857 came the revival of ovariotomy, as it was called by Spencer Wells in the title of one of his retrospective papers, his participation in which earned for him the name of the "Greatest Ovariotomist." The secret of his success did not consist in any special procedure, but by attention to a multiplicity of details, which in the aggregate did a great deal to ensure recovery. Simple bandages for keeping the patient quiet supplied the place of an objectionable crowd of assistants. Every spectator had to declare that he had not made a *post-mortem* examination, or been in a dissecting-room, or attended a case of infectious disease within a week. The room, bedding, clothing, sponges, and instruments received the utmost attainable purification. The incision in the abdominal was shortened; the cyst was emptied before it was drawn out; extreme care was taken to prevent the entrance of ovarian fluid into the peritoneal cavity, and likewise to cleanse the cavity of all blood and fluid.

The final great innovation that has stimulated the practice of surgery was due to the discoveries of Louis Pasteur. Joseph Lister of Edinburgh first made a practical application of these studies of Pasteur and Lemaire. In 1867 he published a paper in the *Lancet* setting forth his crude methods of excluding germs from wounds. Of course it was at once seen by ovariotomists how vital this innovation of Lister's, if correct, would be in affecting the results of their work. Among the earliest to study Lister's methods was his fellow-townsman and friend, Thomas Keith.

The abdominal cavity was next invaded for the removal of fibroid tumors of the uterus. The earlier operations for this purpose were done when fibroids were erroneously taken for ovarian tumors.

So we find ourselves at the end of the nineteenth century with less reason to dread the opening of the abdominal cavity than our immediate predecessors had to dread even minor operations upon the body and limbs. The benefit of this advance to the individual and to the race is manifest; but I would beg you to pause a moment and consider with me if this operative mania has not gone too far—whether the time has not come when we must take an account of stock and differentiate more closely, in the individual cases, whether a removal of the whole or a part of the generative organs of a woman is the only method available for the cure of the diseases or injuries to which these organs are liable.

The natural menopause is attended with a prolonged derangement of the nervous system, not infrequently with impairment of the mental faculties. How much more pronounced are the ultimate effects of the menopause likely to be when the change of life is artificially produced when the nutrition and other functions are in full vigor. Of course, if the mishaps attendant upon childbirth and the diseases invading the sexual organs are incurable by other means than the surgeon's knife, exposure to the sequelæ of the menopause may be the lesser of the two evils; but let us not operate without an eye to the future as well as the present.

DR. EDWARD P. DAVIS of Philadelphia read a paper, entitled

PRIMARY TUBERCULOSIS OF THE BREAST COMPLICATING PREGNANCY,

which will appear in full in a later issue of the NEWS.

DISCUSSION.

DR. H. T. HANKS said that a similar case had come under his observation. When first seen, the patient was somewhat septic, and was supposed to be suffering from cancer of the breast. The latter was amputated, and the woman died three days later of sepsis. The pathologist reported it to be tuberculous mastitis.

DR. PAUL F. MUNDE read a paper, entitled

PERITYPHLITIS AND APPENDICITIS IN THEIR RELATIONS TO OBSTETRICS AND GYNECOLOGY.

(See page 621.)

DISCUSSION.

DR. W. E. FORD of Utica, N. Y., mentioned the case of a girl of sixteen upon whom he had operated for appendicitis. He evacuated the pus, but was unable to remove the appendix. The girl did well for a few days, and then became septic, so he operated again, thinking that another abscess was present, but found only a little pus at the bottom of the tract. Upon making a vaginal examination a large abscess was found, which had not existed at the time of the first operation, and more than a quart of pus was evacuated. There was no history of ovarian or tubal disease.

The speaker also reported a death from iodoform poisoning. He had been called to the country to operate upon a girl supposed to be suffering from appendicitis. No tumor was found in that locality, but an enormous abscess was found in the pelvic cavity, which was opened through the vagina, and two quarts of very offensive pus evacuated. After irrigating the cavity the speaker proceeded to pack it with iodoform gauze, and called the attention of his assistant to the bright yellow color of the gauze, but was assured that it was the ten-per-cent. gauze usually employed. About a yard of it was used. The temperature immediately fell after the operation, and the patient did well for several days, when a wild delirium came on without rise of temperature or other symptoms, and lasted until the patient died twelve hours later. The *post-mortem* showed no sepsis. The girl had a dilatation of the right side of the heart as a result of over-exertion in bicycling.

DR. A. LAPTHORN SMITH had frequently met with disease of the appendix while operating for pus-tubes, and in three instances had found the appendix apparent to the tube.

DR. R. A. MURRAY read a paper, entitled

THE TREATMENT OF SYPHILITIC WOMEN IN PREGNANCY AND PARTURITION,

which will appear in a later issue of THE NEWS.

DISCUSSION.

DR. EDWARD P. DAVIS confirmed all the views of the author, but thought in regard to the diagnosis of these cases that no examination was complete unless it included an examination of the genital tract. The predominant feature which makes syphilis dangerous during pregnancy is the anemia which accompanies it, and causes death of the fetus. Treatment, therefore, should be directed to this anemia, and iron and strychnia given in addition to anti-syphilitic treatment. He thought it questionable to allow a syphilitic mother to nurse her child. It should be fed on modified milk or other artificial food. He also referred to the fact that syphilis in pregnant women usually leaves behind it an endometritis.

DR. MURRAY, in closing, said that he did not mean to say that a syphilitic mother should nurse her child, but that no other woman should be allowed to nurse it.

DR. A. PALMER DUDLEY read a paper, entitled

SOME PATHOGNOMONIC PHYSICAL SIGNS OF CHRONIC GONORRHEAL INFECTION IN WOMEN, AND THEIR VALUE IN THE DIAGNOSIS OF PELVIC DISEASE.

THIRD DAY—MAY 6TH.

DR. THOMAS ADDIS EMMET of New York read a paper, entitled

WHEN TO AMPUTATE IN PREFERENCE TO THE USUAL OPERATION FOR LACERATIONS OF THE CERVIX UTERI.

The author emphasized the fact that amputation, as described in the paper, is in no way intended to replace trachelorrhaphy, but is to be employed in exceptional cases in which it is not possible to get a good result with the latter operation. The operation is indicated in cases of long standing in which the nutrition of the parts has become impaired, making it unfit to hold sutures, and in those cases where the laceration has been deep, involving more or less of the pelvic connective tissue and vaginal wall, and in which there is much scar tissue in the angles of the tear. He also laid stress upon the fact that amputation of the cervix alone in these cases is not sufficient, and that after-treatment, as well as preparatory treatment, should be employed. The operation advised is performed as follows: The uterus is drawn down by gentle traction to the vaginal outlet, and steadied by an assistant; the line of vaginal junction is then established, in order to avoid opening into the bladder in front or the peritoneal cavity behind; an excavation in the shape of a cone is then made in the cervix by cutting with curved scissors toward the center. As each blood-vessel is divided, the neighboring tissues should be seized with forceps as a fresh point of traction, and in this way arresting the hemorrhage. The dissection is continued until healthy tissue is reached. The vaginal tissue is then drawn over the stumps, and stitched to the lining membrane of the uterine canal with silver wire sutures. The two essential features of the operation are to secure primary union and to guard against closure of the cervical canal. To ensure the former, as many precautions against sepsis should be taken as for a laparotomy.

DISCUSSION.

DR. PAUL F. MUNDE considered the operation proposed a good one. He has often amputated elongated cervices with the knife, and stitched the mucous membrane of the vagina to the lining of the cervical canal. He generally combines the operation with anterior and posterior colporrhaphy and Alexander's operation in those cases where there is hypertrophy and prolapse of the uterus.

DR. J. RIDDLE GOFFE said he was opposed to the term "amputation of the cervix," because it gives a false impression of the procedure. He was of the opinion that all cases of laceration of the cervix can be repaired and a good result obtained by the original Emmet operation. A tightly rolled piece of gauze introduced into the canal will keep the latter patulous. In cases where one lip is degenerated or elongated and the other healthy, the former can be removed, but the equilibrium of the organ is destroyed if much of the cervix is taken away.

DR. A. PALMER DUDLEY said he understood the author to say the operation referred to was not intended to take the place of any operation which could save the cervix. He had seen cases in which the elongated cervix protruded through the vulva, and in which no operation but amputation was applicable.

DR. EMMET closed the discussion by saying that the Schroeder operation was really the Emmet operation, which the speaker had performed as far back as 1866. It was conceived by Dr. Sims, but was not successfully practised by him, on account of constant oozing of blood under the flaps and an occasional abscess.

DR. A. LAPTHORN SMITH of Montreal read a paper, entitled

RESULT OF TWO HUNDRED OPERATIONS FOR THE CURE OF RETRODISPLACEMENTS OF THE UTERUS.

Ventral fixation, the author said, is not indicated in cases where there is simply a falling back of the uterus, tubes, and ovaries, and is considered unjustifiable by most operators if the condition can be cured by other measures. Obstruction of the bowel, due to the latter being caught between the sutures, is the chief danger, and another disadvantage is the possibility of subsequent hernia.

Alexander's operation, which is without the disadvantages of the abdominal operation, and in which there is no primary mortality, is indicated in every case where the uterus is not adherent, and in many instances failures are due to inability on the part of the operator to recognize adhesions. When the uterus immediately springs back after having been brought up to the symphysis pubis, this should be considered as contraindicating the operation, and ventral fixation, or, preferably, suspension of the uterus should be performed. If the proper technic is employed, Alexander's operation can be performed in a minute or a minute and a half. A small incision should be made. The secret of success lies in cutting down to the pubis.

DR. M. D. MANN of Buffalo read a paper, entitled

INTRA-ABDOMINAL SHORTENING OF THE ROUND LIGAMENTS FOR POSTERIOR DISPLACEMENTS OF THE UTERUS.

The author described a method of shortening the round ligaments through an abdominal incision, which consisted in doubling them upon themselves in three equal lengths and stitching them together. He reported fifty-eight cases treated by this method.

DR. EDWARD REYNOLDS of Boston read a paper, entitled

A PRELIMINARY REPORT ON A NEW METHOD OF VAGINAL FIXATION.

The author described the forces, the utero-sacral ligaments behind and that attached to the anterior vaginal wall, which determine the normal position of the uterus, and showed by diagrams how a too low anterior attachment will throw the uterus backward. He advised the following procedure to overcome this condition: A short, anterior vaginal incision is made, and the bladder separated up to the level of the internal os, as previously ascertained by the sound; the uterus is now replaced, and the point at which the bladder separates from the anterior wall is carefully determined by a sound introduced into the bladder. A cervix needle, threaded with a silk carrier, is introduced in the vaginal wall at a point in front of the separation between it and the bladder, and is carried obliquely through the tissues, emerging on the cut surface just below its junction with the bladder. A silver suture is threaded on the carrier, and drawn through the cervix at the level of the internal os, and brought out through the anterior vaginal wall at a similar point upon the opposite side. A second suture is placed as near the first as possible, care being taken that the uterus is still well forward, and the sutures twisted and turned down. Coarse wire should be used, as the stitches will be exposed to considerable tension. The cut edges of the mucous membrane are then stitched together with fine catgut. It is important that the apposition of the superficial wound should not be allowed to increase the tension upon the deep sutures.

Dr. J. **Riddle Goffe** of New York read a paper, entitled

SHORTENING THE ROUND LIGAMENTS THROUGH THE ANTERIOR VAGINAL FORNIX FOR POSTERIOR DISPLACEMENTS OF THE UTERUS.

The technic of the operation was described as follows: The uterus is drawn well down to the vulva; a cross section is made at the utero-vaginal junction, and the vaginal tissues dissected off the bladder down to the peritoneal reflection; the central point of this incision is then caught up and the anterior vaginal wall drawn taut; a longitudinal incision is then made extending to the neck of the bladder, and blunt dissection from the urethra to the cross section separates the tissues for an inch and a half on either side. The peritoneum is broken through, and the finger is hooked over the fundus of the uterus which is delivered into the vagina. A free incision will permit the breaking up of all adhesions and inspection of the appendages, which may be removed, if necessary. The round ligament on one side is then caught up with the fingers, the sheath opened with an aneurism needle, the ligament drawn up two or two and a half inches, doubled upon itself, and stitched with two or three fine sutures, and the same done on the opposite side; the uterus is then replaced, and a little gauze is introduced between it and the bladder. The longitudinal incision in the vagina is closed with a running catgut suture. The author has employed this method in eight cases with entirely satisfactory results.

DISCUSSION.

Dr. **Paul F. Munde** said that inasmuch as he was the first to perform Alexander's operation in this country, he was much gratified to see how generally it has been accepted. Dr. Smith's admirable description of the first part of the technic is identical with the one the speaker has always employed. The operation results in a permanent cure in nearly all cases, and is *the* operation in cases of *movable* retroflexed uteri where the appendages are not diseased.

Dr. **Beverly McMonagle** said that Alexander's operation is often followed by suppuration and scars, and he prefers treating these cases by opening the abdomen and suspending the uterus, after the method of Kelly. He is opposed to fixation of the uterus, whether from above or below, because it interferes with pregnancy. He also referred to the pain and numbness complained of by patients who had been subjected to vaginal fixation.

Dr. A. **Palmer Dudley** said he had discarded ventral fixation because he had lost a patient from obstruction of the bowels following this operation. He never performs Alexander's operation unless he can make a diagnosis of perfect appendages.

Dr. H. J. **Garrigues** had performed Alexander's operation, combined with colporrhaphy, with good results. He did not think it is of much service if there is much descent of the uterus and hypertrophy of the supravaginal portion of the uterus. Amputation of the cervix should be performed in these cases in order to secure the involution of the uterus which follows this operation.

Dr. E. E. **Montgomery** of Philadelphia read a paper, entitled

PELVIC BLOOD COLLECTIONS AND THEIR TREATMENT BY VAGINAL INCISION.

The most common cause of internal hemorrhage and the formation of blood collections is the rupture of an ectopic pregnancy, but may be due to many other causes. Intraperitoneal hemorrhage is the most serious, and, if extensive, may be followed by such profound shock that death occurs in a few hours. In other cases the bleeding is slow and may remain encysted, become absorbed, or is discharged into the rectum, vagina, or bladder. If there is reason to believe that the hemorrhage had ceased, it is not necessary to operate on a recent case, and in this was run the risk of dislodging a clot and causing a fresh hemorrhage. In all other cases, the collection of blood should be evacuated whether it be free in the abdominal cavity or encysted. A free vaginal incision was advocated for this purpose as being the easiest method of reaching the hematocele. After clearing out the cavity, it should be irrigated with normal salt solution and packed with sterile gauze.

DISCUSSION.

Dr. **Harris** cited two cases of hematocele which had come under his observation. The first resulted from torsion of the pedicle of an ovarian tumor. The second case was that of a woman who had been confined two weeks previously, whom he had been called to see on account of an abscess of the vagina which had discharged spontaneously a few days before. A boggy tumor of the vagina was incised and a large quantity of pure blood evacuated. The cause of the hematocele could not be ascertained. Labor had been normal.

Dr. E. W. **Cushing** of Boston then read a paper, entitled

SOCIOLOGICAL ASPECTS OF GONORRHEA.

After the discussion of this paper the president introduced the newly elected president, Dr. Paul F. Mundé of New York, with a few well chosen remarks.

DR. MUNDE thanked the members for their confidence in him and said he would do all in his power to make the next meeting of the Society as successful as the present one and those which preceded it.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Nineteenth Annual Meeting, Held at Washington, D.C., May 4, 5, and 6, 1897.

FIRST DAY—MAY 4TH.

DR. CHARLES H. KNIGHT of New York delivered the President's Address. After a greeting to the members he called attention to the necessity of greater attention to antisepsis in clinical work. The matter had been forcibly brought to his attention by the recent observation of several unfortunate cases due to a lack of care in this respect. Closely allied to this topic is that of antisepsis in general. It may be impossible to attain perfect asepsis in nasal surgery, and in view of the perfect drainage usually attained, perhaps it is not necessary.

A question much discussed at the present time is that of the value of the laryngoscope in relation to the singing voice. In spite of the various claims made for it, it has hardly done more than to corroborate information already obtained in other ways. As to voice-production, we know from the remarkable results which have followed certain laryngectomies that intelligible speech is possible without a larynx by means of the aid afforded by the lips, tongue, palate, teeth, wall of the pharynx, nasal chambers, and the bones of the skull.

On the other hand, the mirror enables us to make out whether, in a given case of vocal impairment, the difficulty lies in faulty innervation, altered muscular action, neoplasms, hypertrophies, or simple inflammation. We are often compelled to take charge of patients who are aspirants for musical honors, but to whom Nature has denied the essentials of success; yet we may frequently assist in the restoration of a lost voice or give such advice as will lead to its recovery.

The remarkable discovery of Röntgen bids fair to be of service in the special field of laryngology. A corresponding fellow of this association, Dr. John MacIntyre of Glasgow, has successfully experimented with the rays. They will doubtless be of use in locating foreign bodies, determining the size of tumors, and in marking out the extent of malignant infiltration.

GUAIACOL AS A LOCAL ANESTHETIC IN MINOR NOSE AND THROAT OPERATIONS

was the title of a paper by DR. JAMES E. NEWCOMB of New York.

The writer said that while cocain is in a general way an ideal local anesthetic, unpleasant, not to say dangerous, effects sometimes follow its use, and attempts had been made to find a substitute for it. Eucain and tropococain had been used, and were still on trial. Quite recently guaiacol had been suggested for this purpose. Laurens of Paris had used a solution in olive oil, and reported quite promising results. In the ear, a few drops of the warmed preparation had, after preliminary cleansing, been instilled, and in fifteen or twenty minutes removed with hydrophile gauze. Sufficient anesthesia was thereby induced to enable paracentesis of the drum membrane to be painlessly performed. A similar application may be of service in incising furuncles of the meatus. In the nose, after spraying and tamponing in the usual manner, the inferior turbinates may be cauterized without any discomfort. So also polypi may be removed with the cold snare, and even with the hot wire, and septal spurs can be sawed off easily. The tissues do not retract, as with cocain, so that guaiacol can never be as serviceable as the latter where we wish to carefully inspect the nose, or in a case of supposed reflex neurosis, to determine the existence of sensitive areas.

In the pharynx, the application of the guaiacol solution may cause severe reflex movements, but sufficient anesthesia is induced to permit of cauterizing voluminous granulations and enlarged tonsils. In the larynx the incomplete absorption of the remedy proves an obstacle to satisfactory anesthesia.

These experiments of Laurens have been repeated by Geronzi, who dissolved the guaiacol in alcohol. This makes a solution a little more agreeable to handle, without apparently modifying in any way its anesthetizing power. Geronzi's results closely correspond to those of Laurens. In aural practice, he was able, under guaiacol anesthesia, to perform four myringotomies, remove granulations from the drum twice, polypi five times, and the malleus three times. In attacks of middle ear trouble, a certain disadvantage arose from the fact that the field of operation becomes obscured when the guaiacol comes in contact with the blood, probably owing to an oxidation. Geronzi suggests that guaiacol prepared by synthetic crystallization would be more constant in action and less irritating.

Dr. Newcomb had used guaiacol as a local anesthetic thirty-six times on twenty-eight different patients, sixteen men and twelve women, aged from sixteen to fifty-five years. It was used in spray, by application on tampons and hypodermically. In no instance had he noticed the formation of any emulsion or magma from admixture with the mucus. The operations included removals of polypi with the cold snare, curetting diseased ethmoid cells, the nasopharyngeal vault, and the pharyngeal wall, sawing off spurs of the nasal septum, cauterizing inferior turbinates and tonsils, and one application to the larynx preliminary to rubbing in a strong solution of lactic acid.

Anesthesia was perfect in fourteen, partial in sixteen, slight in two and entirely wanting in four cases.

DR. S. W. LANGMAID of Boston then read a paper on

SUB-MUCOUS HEMORRHAGE OF THE VOCAL CORDS.

Five cases were reported, in all of which the hemorrhage occurred at the junction of the anterior with the middle third of the cord. Four were on the right cord and one on the left. Three of the patients were men, one a woman. All were voice users, four being vocalists, the fifth an actor.

Four of the hemorrhagic patches were distinctly globular in shape and under the mucosa. The remaining one was diffuse. All came on suddenly and were the result of excessive vocal effort. A preexisting laryngeal catarrh occurred in each instance. The symptoms in all were sudden hoarseness, vocal impairment and limitation of range in the higher voice register.

The condition is, in reality, a vocal apoplexy. The preexisting catarrh lowers the laryngeal phonatory muscles; greater power than usual is, therefore, necessary to bring them into proper position. Hence, congestion, followed by vascular rupture. This accident may occur in first-class artists with irreproachable vocal technic as well as in those who are victims of faulty vocal methods.

Treatment.—Absolute rest, followed by strychnin and intralaryngeal galvanization. In none of Dr. Langmaid's cases had there been any hemoptysis. Dr. Dundas Grant had reported one case due to sneezing in which a fluid tumor (hematoma) had been the sequel of the blood extravasation.

DISCUSSION.

DR. J. W. GLEITSMANN of New York had seen one case result from a severe blow on the larynx. The late Dr. Morgan, of the Association, had reported one case of extravasation into the ventricular band.

DR. C. E. BEAN of St. Paul had seen one case in which the hemorrhage had recurred two or three times, and it was a long time before the blood was entirely absorbed.

The next paper was by DR. A. COOLIDGE, JR., of Boston on

HYSTERICAL DYSPHAGIA.

He said that this condition was frequently confounded with esophagismus or esophageal spasm, but is in reality quite distinct from it. The spasmodic condition may result from affections of the brain or tenth pair of nerves, from various reflexes from other organs, from drugs, sea-sickness, and hydrophobia.

Hysterical dysphagia is more common in women, but occasionally seen in children. Emotional causes may bring it on, and it may occur in pregnancy without assignable cause.

Symptoms are pain, sense of constriction, and feeling as of a foreign body. Onset generally sudden. A temporary lodgment of a foreign body may provoke it, the condition persisting after removal of the cause, and occasionally it is caused by affections of the pharynx and tonsils. Regurgitation is not, as a rule, observed. The sound may or may not pass readily. The trouble is observed in the first part of the act of swallowing.

Treatment should include removal of neighboring lesions and frequent passage of the bougie, but a sedulous avoidence of the esophageal electrode, as serious results have been reported from the effect on the heart through the vagus.

Discussion was opened by DR. THOMAS HUBBARD of Toledo, who spoke of sacculated dilatation of the gullet as one cause of obstruction.

DR. JOHN H. LOURNAN of Cleveland had cured one case occurring in a child of four years, with gradual onset of symptoms, by means of suggestion. Sounds should not be passed recklessly, as at least three deaths had resulted from the use of the ordinary stomach tube.

DR. GLEITSMANN had found the removal of an enlarged lingual tonsil to be efficacious in curing one case.

DR. A. L. SWAIN of New York had been led to attach much importance to enlarged lingual tonsil as a causative factor in such cases. In his own experience lingual varix had not so acted, but the fact had been insisted upon by others that it frequently did.

DR. SAMUEL JOHNSTON of Baltimore had cured one case by removal of wax from the external ear.

DR. EMIL MAYER of New York had seen one case of dysphagia in a child referable to congenital stenosis. He attached much importance to auscultation as a means of diagnosis.

DR. D. BRYSON DELAVAN of New York would always refer the etiology in the so-called hysterical cases to some definite local or neighboring lesion.

DR. JOHN A, FARLOW had seen one case in a man who, while swallowing, or in reading aloud, would have a sudden spasmodic seizure of the neck muscles. In this case the removal of impacted wax relieved all the difficulty.

DR. LANGMAID referred to the condition as observed in anemic servant girls without apparent nervousness or observable structural lesions.

DR. COOLIDGE, in closing the discussion, declared his belief that in the anemic cases the anemia was the result rather than the cause of the difficulty in swallowing.

The next paper was a joint contribution by DRS. W. H. PARK of New York and JONATHAN WRIGHT of Brooklyn

ON BACTERIA OF THE NORMAL NOSE AND BACTERICIDAL PROPERTIES OF NASAL MUCUS,

and was read by DR. WRIGHT.

The reader had, ten years ago, found pathogenic bacteria in normal noses, and his experiments had been confirmed by Von Besser. Wurts and Lermoyez had asserted that nasal mucus would destroy anthrax bacilli. Thompson and Hewlett had maintained that while bacteria were common enough in the nasal vestibule they were wanting in the deeper nasal areas.

Drs. Park and Wright examined the mucus from thirty-six normal noses. It was removed from the deeper regions on sterile cotton swabs, the vibrissæ having been cut off by sterilized blades and the vestibule washed with bichlorid. Inoculation from the swabs of culture media gave bacterial growth in all but six cases out of the entire series.

Bacteria were found on the mucosa from the noses of two healthy rabbits. In one instance the mucus withdrawn did not check the growth of diphtheria bacilli, staphylococci, or streptococci, but it did check the growth of anthrax germs. The same inhibitory result followed the employment of sterilized sheep's serum.

The comparative freedom of the interior of the nose from bacteria might be due to the washing down of the serous exudation from the higher regions which tidal air did not penetrate, the action of the ciliæ, the fact that nasal mucus is a poor culture medium for most germs, the straining action of the vibrissæ, and the fact that the ordinary bulk of inspired air contains but few germs anyway.

In the case of two rabbits, in each of whose noses one drop of a virulent bacterial culture had been allowed to fall, both died of septic infection inside of three days.

The closing paper of the session was by DR. J. W. GLEITSMANN of New York on

TREATMENT OF CHRONIC AFFECTIONS OF THE TONSILS, WITH DEMONSTRATION OF INSTRUMENTS.

Next to hypertrophy of the organ, as a whole, its most frequent chronic affection is probably the chronic inflammation of its follicles. The surface of the tonsil becomes roughened and irregular, while there is a destruction of its follicles and a plugging up of the lacunæ with white masses, which are products of inflammation. The retention of these is often the source of many ailments, whose true cause is often overlooked, as the masses are not always visible. For the proper treatment, preference is given to a small palate-hook (exhibited), by which the upper part of the tonsil where the masses most abound is easily exposed.

When the crypts contain leptothrix masses, the blunt hook of Moritz Schmidt is an excellent instrument. Dr. Gleitsmann has modified it, retaining the blunt tip, but sharpening the sides. This hook is also useful for separating adherent faucial pillars.

An inspection of the posterior surface of the tonsil is often prevented by the presence of a flap or fold of varying extent, which may seem on superficial inspection to be a part of the anterior pillar, but when the latter is drawn aside, a small deposit of lymphoid tissue is seen between the two. The greater part of the tonsil will be found behind this fold. This condition is probably the result of a previous attack of acute inflammation combined with chronic follicular disease. Harrison Allen has fully described this condition.

The proper method of removing this fold depends somewhat on its size and density. The Ruault punch-forceps are often of service. The forceps are, however, unduly large and have a vertical action, so that it is difficult to grasp the fold between the cutting-blades.

The reader of the paper then exhibited a modification of the Ruault instrument which he had devised. Its cutting direction was horizontal instead of vertical, and it was much smaller. In this class of operations it is often advisable to use cocain. If the fold is very large, several sittings may be necessary to effect complete removal. Bleeding is not severe and can be easily controlled by cracked ice, mild styptic or caustic solutions.

SECOND DAY—MAY 5TH.

A Case of Intranasal Tumor.—The patient was shown by DR. J. H. BRYAN, of Washington. He was a young man who had had nasal stenosis for about four years, due to a tumor first appearing in the left anterior and later in the right posterior naris. The septum was intact posteriorily; consequently it was inferred that the new growth had pierced the middle of the septum. From a bit removed for microscopic examination, it was found that the tumor was a fibrosarcoma, though mere inspection had suggested simple fibroma. Quite recently, diplopia and vertigo had been superadded. The growth bled freely when manipulated but there was no spontaneous hemorrhage. The most important question was as to the advisable method of removal, and the opinion of those present was solicited upon this point.

DR. M. R. WARD of Pittsburg had operated upon a case of fibrosarcoma four years ago, and though rapid recurrence had been looked for, his patient was alive to-day with no reappearances. He was inclined to think that this fortunate issue threw some doubt on the correctness of the original diagnosis.

DR. W. E. CASSELBERRY of Chicago had reported, some eight years ago, a case of simple fibroma of the nose. It could not be removed in its entirety, so he had segmented it with the galvano-cautery knife, and then removed it in pieces with the snare.

DR. JONATHAN WRIGHT of Brooklyn would regard Dr. Bryan's case as one of fibrosarcoma from the fact that the nasopharynx was not involved. Pure fibroma of the nasopharynx is common enough, but as confined to the middle and anterior part of the nose it is practically unknown.

DR. J. SOLIS COHEN of Philadelphia would advise in the present case the performance of Rouge's operation.

DR. THOMAS HUBBARD of Toledo thought that the vertigo and the diplopia suggested brain involvement, and doubted whether the case should be operated upon at all.

DR. C. C. RICE of New York would strongly advise against trying to remove such growths with the snare. It was a futile method so far as thorough eradication was concerned.

DR. J. N. MACKENZIE of Baltimore observed that the Rouge operation frequently failed to afford a complete access to the site of attachment. He would, therefore, advocate the modified Langenbeck procedure, whereby the superior maxilla was rotated outward. By this measure total eradication could be done.

DR. BRYAN then read a paper on

A CASE OF SUPPURATION OF THE FRONTAL AND MAXILLARY SINUSES.

He began by saying that recent influenza epidemics had brought to light many cases of this nature. Some cases of frontal sinus disease are undoubtedly due to propagation of disease from the antrum of Highmore, owing to an abnormal communication between the two cavities. On the other hand, the converse is more often true. The infundibulum frequently projects beyond its usual point of termination as a half tube, ending in a valve-like fold of membrane which directed the drainage from the frontal sinus into the antrum.

He then described the anatomy of the frontal sinus, showing illustrative photographs of frozen skull sections.

(To be continued.)

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ORIGINAL ARTICLES.

THE PHYSIOLOGY OF INTERNAL SECRETIONS.[1]

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SO FAR as I am aware, there is no authorized definition of the term "internal secretion," but if we adhere closely to the facts in the case, the expression may be interpreted to mean certain products that are elaborated by gland cells from material furnished by the blood, which are afterward passed back to the blood or lymph stream, to subserve some function in general or special nutrition. From the standpoint of the mechanism of secretion, a useful distinction has been drawn between these internal secretions and secretions of the usual kind, or external secretions. The latter are in all typical cases poured out upon a free epithelial surface that communicates with the exterior, while the internal secretions are discharged upon the closed endothelial surfaces of the blood and lymph vessels.

It is my purpose to-day to call your attention briefly to some of the important results obtained by experimental physiology which tend to prove the existence of internal secretions in a number of glandular organs. The main interest to the physiologist lies, perhaps, in the light this work has thrown upon the functions of the blood glands, or ductless glands, especially the thyroid, suprarenals, hypophysis cerebri, thymus, and spleen. Forty years ago the physiology of these bodies was not only unknown, but was beyond the reach of intelligent hypotheses. Within recent years facts have accumulated, especially with regard to the thyroid and suprarenals, that give us a new standpoint from which to view their physiology—a standpoint also from which experimental investigations may be planned with reasonable hope of abundant success in the future. I shall not attempt an historical review of recent work in this subject, as this has been given already in numerous general addresses and special papers.[2] I desire only to emphasize what seems to be the outcome of the physiologic work that has been done in the last twelve or thirteen years, and to explain briefly the character of the work now in progress.

If we include under the term "thyroid tissue" not only the thyroid body itself, but also the accessory thyroids and the neighboring parathyroids, it has been shown beyond reasonable doubt that complete removal of this tissue in man and the related mammals is followed, as a rule, by serious disturbances of nutrition which are immediately or ultimately fatal to the animal. Moreover, in these cases the reintroduction of thyroid material into the body, whether this introduction be made by grafting the tissue, by subcutaneous or intravascular injections, or by absorption from the alimentary canal, results in an amelioration, or even entire removal, of the symptoms of malnutrition. The physiologists recall with pleasure that these two fundamental facts were first discovered as the result of experimental work in physiology.

It follows as a logical conclusion from the successful effects attending its therapeutic use, as well as from the evil effects of its destruction or removal, that the thryoid tissue produces, normally, something that is in some way essential to the nutrition of the body. What that something is, has been revealed apparently by the beautiful chemical and clinical researches of Baumann and Roos. Baumann[1] has succeeded in isolating a substance—thyro-iodin, or iodothyrin, as it has been named more recently—which, according to the experiments of Roos,[2] preserves the beneficial effects of thyroid tissue. The fact that extracts of thyroid tissue or iodothyrin when absorbed into the blood ameliorate or remove the evil effects resulting from loss of function of the thyroid seems to prove at once that the normal function of the thyroid tissues is not merely to excrete poisonous material from the blood after the manner of the kidneys. It indicates, on the contrary, that these tissues act normally by giving off a material to the blood that in some way affects favorably the nutrition of all, or a part, of the tissues of the body. In other words, the thyroid tissues form a true internal secretion.

The most important of the facts which remain to be discovered is the manner of action of this secretion upon the tissues of the body. At present we can only speculate upon the answer to this problem. More experimental work is required before a definite solution can be reached. To account for the action of the thyroid secretion, two main hypotheses have been proposed. According to one hypothesis, the function of the secretion is antitoxic. In some way it antagonizes an unknown toxic substance supposed to be formed in the body in the course of normal metabolism. When the thyroid tissues are removed, this poisonous material, being imperfectly excreted, accumulates in the blood and produces the fatal symptoms of thyroidectomy by a process of auto-intoxication. The other hypothesis assumes that the secretion of the thyroid acts normally by promoting or regulating the metabolism of other parts of the body, particularly, perhaps, of the nervous tissues. We might designate this as the trophic or neurotrophic hypothesis. It is less specific than the antitoxic hypothesis, and therefore, perhaps, less objectionable in the present incomplete stage of our knowledge; but as no decisive, or even probable, proof can be given for either view, it seems unnecessary to critise the various facts brought forward in support of one or the other of them.

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[1] Abstract of a contribution to the discussion upon "Internal Secretions," at the Fourth Triennial Congress of American Physicians and Surgeons, Washington, D. C., May 4, 5, and 6, 1897.

[2] See especially Abelous, *Révue Génerale des Sciences*, May 15, 1893; Schäfer, "Address in Physiology, Annual Meeting of the British Med. Assoc.," London, 1895; Meltzer, "On Thyroid Therapy," *New York Med. Journal*, May 25, 1895.

[1] Baumann, *Zeitschrift für Physiolog. Chemie*, Bd., xxi, 1896; also Bd., xxii.

[2] Roos, *Ibid.*, Bd., xxii.

A very interesting phase of thyroid physiology which has recently come to the front is the nature of the functional relationship between parathyroid tissue and thyroid tissue proper, such as is found in the thyroid body and the accessory thyroids. The parathyroids seem to occur in all mammalia. According to a recent description by Kohn[1] there is always one of these bodies on each side attached to the external or posterior surface of the lateral lobes of the thyroid, while in some animals, *e. g.*, the dog, cat, and rabbit, there is an additional one on each side, imbedded in the substance of the thyroid lobes. Histologically, the structure of these small bodies bears no resemblance to that of the thyroid. They possess the generally appearance of embryologic tissue and have therefore been regarded usually as an immature form of thyroid tissue which, under the stimulus of increased functional activity, is capable of developing into normal thyroid structure. Satisfactory evidence is lacking that such a transformation does actually take place under the conditions supposed, as, for example, after complete excision of the two thyroid lobes. On the contrary, the evidence from histology, as well as from embryology, seems to indicate that the two tissues are not only fundamentally different in structure, but are also different in origin.

On the physiologic side, Gley[2] was the first to prove the great importance of the parathyroids. He showed that in rabbits complete extirpation of the thyroid lobes alone is not followed by fatal result, so long as the parathyroids remain. Removal of both thyroids and parathyroids, however, is in most cases followed by typical symptoms of complete thyroidectomy, ending in the death of the animal. This latter result has been contested by some observers, but renewed investigations have demonstrated its accuracy. Gley explained his results on the hypothesis that after removal of the thyroid, its function is vicariously assumed by the parathyroids. He concluded therefore that the functional value of the two tissues is identical. Recent work, however, tends to throw doubt upon this conclusion. Vassale and Generali[1] state that in dogs and cats removal of all four parathyroids produces the typical acute symptoms of complete thyroidectomy, and finally causes the death of the animal, in spite of the fact that the thyroid body proper is left practically uninjured. On the other hand, complete removal of the thyroid lobes is not immediately injurious to the animal, provided the parathyroids, or, in some cases if even one only of the parathyroids, are left. They contend, therefore, that the result in dogs and cats usually attributed to extirpation of the thyroids is due in reality to the simultaneous removal of the parathyroids.

The results of recent physiologic experiments upon the suprarenal bodies have not been less interesting, although less complete than those upon the thyroid. These curious bodies, like the thyroid, are found constantly in all classes of the vertebrates, and seem, therefore, to be organs of fundamental importance. As long ago as 1856, Brown-Séquard[2] stated that extirpation of both suprarenals is usually fatal to the animal, death occurring generally very shortly after the operation—more rapidly, according to this observer, than after removal of both kidneys. This statement has been questioned frequently by other observers, but the results of the renewed investigations that have followed the recent revival of interest in the physiology of the ductless glands seem to corroborate fully the account given by Brown-Séquard. In the case of dogs, according to Szymonowicz,[3] death follows the operation within fifteen hours. It has been shown, also, that in some species of animals accessory suprarenals are not uncommon, and it is possible that this fact may explain the survival of a certain number of animals after supposed complete extirpation of the suprarenals. Removal of only one suprarenal does not appear to cause any noticeable effect. In the case of complete removal, followed by a fatal result, the prominent symptoms preceding death are extreme muscular weakness, asthenia, and, in the case of dogs examined during this period, a great fall in blood pressure, together with a feeble heart-beat. It will be noted that in cases of Addison's disease in man the important symptoms, in addition to the pigmentation, are also an asthenic condition of the muscles and the heart. What explanation have we to offer for the surprisingly profound effect produced upon the body by the removal of these small organs?

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[1] Kohn, *Archiv. für mik. Anatomie*, Bd. 44, 1894.

[2] Gley, *Archives de Physiologie Normale et Pathologique*, 1892.

[1] Vassale and Generali, *Archives Italiennes de Biologie*, xxv. and xxvi, 1896.

[2] Brown-Séquard, "Comptes rendus de l'Ac. des Sciences," XLIII., 1856; *Journal de la Physiologie*, I., 1858.

[3] Szymonowicz, *Archiv. f. d. gesammte Physiologie*, LXIV., 1896.

Unquestionably the most significant facts with regard to this problem have been obtained from a study of the effects of injections of suprarenal extracts into living animals. A number of the earlier experiments of this kind, especially those performed upon rabbits, resulted in the death of the animal, the preceding symptoms being convulsive movements, followed by some paralysis. The really valuable results, however, have been obtained by a more exact study of the effects of such injections upon the vascular and respiratory organs. Most of our knowledge upon these points has been derived from the researches of Oliver and Schäfer[1] and Cybulski and Szymonowicz.[2] The important facts determined by them, and since corroborated in many laboratories, are as follows: Extracts of the medulla of the suprarenal bodies injected into the veins of a living animal cause a pronounced slowing of the heart-beat and a large rise of blood pressure. If the animal is first given atropin to paralyze the inhibitory nerves to the heart, or if the vagi are previously cut, the injection causes usually a marked quickening, instead of a slowing of the heart-beat, and a greater, indeed often an extraordinary, rise of blood pressure. The respiratory organs are not affected so seriously, a temporary slowing and shallowing of the respiratory movements being the result usually noticed. The effect upon the heart and blood-vessels is quite temporary. Its exact duration depends somewhat upon the dose, and in part upon other less evident conditions, but, as a rule, within a very few minutes the rise in blood pressure, as well as the slowing of the heart-beat, passes off completely.

The physiologic explanation of the slowing of the heart caused by the suprarenal extracts offers no difficulties. Since this effect disappears completely upon section of the vagi, or after the injection of a few milligrams of atropin, it can only be due to a stimulating action upon the central endings of the inhibitory fibers, that is, upon the so-called cardio-inhibitory center in the medulla. According to Oliver and Schäfer, the inhibitory effect is felt mainly upon the auricles. The beats of this part of the heart become weaker and slower and may cease altogether, while the ventricular beats, although slower, are more vigorous. After the vagi have been cut, suprarenal extracts cause a quicker and, according to Oliver and Schäfer, who measured the extent of contractions directly, a stronger beat. This accelerating effect upon the heart after removal of the inhibitory fibers is not due, as we might at first suppose, to a stimulation of the central ends of the accelerator fibers, since it is still obtained after section of the cord in the neck, or after extirpation of the first thoracic ganglia. It must therefore be due to a peripheral action of the extracts upon the heart itself, either upon the muscle of the heart directly (Oliver and Schäfer), or upon the so-called motor ganglia (Szymonowicz).

The effect of the injections upon blood pressure has been explained differently by those engaged in the work. Both Oliver and Schäfer, and Cybulski and Szymonowicz believe that the enormous rise in blood pressure is due mainly to a great constriction of the arterioles. According to the latter this constriction is brought about by a stimulating action of the extracts upon the vasomotor centers in the medulla and cord, while according to Oliver and Schäfer, the action is exerted directly on the muscles of the blood-vessels. Szymonowicz admits that if the cord is cut just below the medulla, a great rise of pressure can still be obtained, but he explains this by supposing that the extract acts on the spinal centers. He asserts that if the entire cord is destroyed, a rise of pressure can no longer be obtained. The experiment that he gives to illustrate this last point is, however, far from being convincing. The protocol of the experiment shows that the act of destroying the cord in itself reduced the blood pressure to zero. Moreover, Biedl[1] reports that he has been able to get a rise in pressure from injection of the extracts after complete extirpation of the cord. The evidence therefore seems to favor the view proposed by Oliver and Schäfer, and this view is still further supported by the fact that when the volume of a limb is measured plethysmographically it often shows a distinct diminution after suprarenal injection, even though its nervous connections with the central nervous system are entirely severed.

The significance of the marked reaction exhibited by suprarenal extracts depends very largely upon the possibility of proving that the substance producing the reaction is formed normally within the gland. It is conceivable, of course, that in the dead gland

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[1] Oliver and Schäfer, *Journal of Physiology*. XVIII., 1895.

[2] Cybulski and Szymonowicz, *Gazeta Lekarska*, 1895. (Abstracted in Jahresb. d. Thier Chimie, 1895.) Also Szymonowicz, *Archiv. für d. gesammte Physiologie*, LXIV., 1896.

[1] Biedl, *Wien. klin. Wochenschrift*, ix, 1896.

post-mortem changes might cause the formation of a substance giving this reaction, although under the normal conditions of life it might never be formed. Fortunately we have direct proof that the active substance in question is a normal product of the metabolism in the gland. Cybulski and Szymonowicz found that blood drawn from the suprarenal vein when injected into the circulation of a normal animal gives the same effect, although less in amount, as extracts of the suprarenal glands, while blood from other veins has no such action. This result has been denied by Oliver and Schäfer, apparently upon insufficient experimental grounds. Langlois,[1] on the contrary, has been able to corroborate this effect of suprarenal blood, and in the laboratory at Baltimore Dr. Dreyer has obtained clear proof of a similar action. It appears from Dr. Dreyer's experiments that the effect is not obtained in every animal, but in some cases the results are very positive, and in a matter of this kind the positive evidence is the most important. When we remember that we are dealing most probably with a material formed by the secretory activity of gland cells, and that the amount of this material may vary at different times or under different circumstances, it is not surprising that negative as well as positive results are obtained.

Since it seems certain that the substance does occur under normal conditions in the venous blood flowing from the gland, we are justified in concluding that it is a normal product of the metabolism of the medullary cells of the gland, and that it is discharged or secreted directly into the blood. It must, therefore, exert continually a stimulating effect upon the heart and blood-vessels. In corroboration of this last conclusion, we have some striking experiments recorded by Szymonowicz which show that that, after complete extirpation ot the two glands, the blood pressure becomes greatly depressed. Both Oliver and Schäfer, and Cybulski and Szymonowicz conclude that the normal function of the suprarenals consists in furnishing this stimulating substance to the blood. The former observes believe that its effect is mainly upon the muscular tissue, that it has a general tonic or augmenting action on all varieties of muscle found in the body—the striated muscle, as well as the cardiac and plain muscle tissue. Cybulski and Szymonowicz hold essentially the same general view, except that they believe that the substance acts upon the nerve centers controlling the muscular tissues, rather than on these tissues directly. It is, perhaps, impossible at present to decide as to this detail. Upon either of the views proposed we can understand at once why removal of the suprarenals brings on a condition of muscular asthenia, and why the continual activity of these organs is so essential to the body as a whole. It is significant in this connection to recall that Oliver and Schäfer found that extracts of the suprarenals in cases of Addison's disease did not contain this stimulating substance.

A third interesting member of the group of ductless glands is the hypophysis cerebri, and a few words may be said as to its supposed physiologic activity. This gland is commonly described as consisting of two parts, the anterior and the posterior lobe. The histology and the embryology of the two parts indicate that they are entirely different in origin and in structure. The anterior lobe is evidently a glandular structure. It develops originally as a saccular invagination from the buccal epithelium, and has essentially the same origin in all the vertebrates which have been examined. According to Haller[1] it is not strictly a ductless gland, since it possesses an imperfectly developed system of ducts which opens between the dura and the pia mater. It is evidently a secreting structure, and the fact that its secretion is discharged between the meningeal membranes, suggests some special connection with the physiology of the brain. Histologically, its structure recalls that of the thyroid gland, particularly in the fact that a colloidal material is said to occur frequently in the lumina of the gland tubules. In some animal, *e.g.*, the dog and the cat, it is a very small body, but in others, as the rabbit, sheep, ox, and man, it is of considerable size, and bears every indication in its structure of being an active secretory organ.

The posterior lobe, on the contrary, is very small in all animals, and has the appearance of being a rudimentary organ. It develops as an outgrowth from the infundibulum of the brain, and is more properly spoken of as the infundibular lobe. Its histology is very incompletely known. According to Berkley[2] it contains numerous typical nerve-cells, ependymal cells and neuroglia, a number of glandular epithelial cells arranged in part to form tubes or closed vesicles that contain a colloidal material, and some curious structures resembling nerve-end organs. If this description is correct, it seems quite certain that the entire lobe does not originate from the nerve tissue of the brain.

The observations bearing upon the functions of the hypophysis have been limited to the glandular lobe. On the pathologic side it has been shown that in many, if not in most, of the cases of acromegalia, the glandular lobe exhibits pathologic changes.

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[1] Langlois, *Archives de Physiologie Normale et Pathologique*, 152, 1897.

[1] *Morphologisches Jahrbuch*, xxv, 1896.

[2] Berkley, *Johns Hopkins Hospital Report*, iv, 1895.

For this reason, extracts of the gland have been used therapeutically in cases of acromegalia and, according to some reports, benefits have followed the treatment to the extent that some of the disagreeable symptoms have shown amelioration. The evidence from this side, however, is not satisfactory, and the nature of the connection between acromegalia and disturbance of the function of the hypophysis, if any exists, needs more complete investigation.

The experiments make by the physiologists are also meager and inconclusive. Gley[1] reports a set of experiments made upon rabbits in which he attempted to destroy the gland by an operation from above. The experiments were made upon rabbits from which the thyroid lobes had been previously removed, with the idea of demonstrating that a similarity in function exists between the thyroid and the hypophysis. All but one of the animals died owing to the severity of the operation. In the single survivor it was noted that the animal exhibited at times spasmodic muscular contractions, and some degree of paresis, and that it died about a year after the operation. On the assumption that the animal would have lived if the thyroid lobes alone had been removed Gley concluded that the removal of the hypophysis had prevented the parathyroids from replacing completely the loss of the thyroid, and that, therefore, the hypophysis is related in function to the thyroid tissue. Naturally but little importance can be attached to a single experiment of this kind, and so far as I know the author has not repeated the investigation. Vassale and Sacchi[2] claim to have removed the hypophysis partially or completely in a number of animals by an operation through the base of the skull. In cases of complete removal the animals died within a short time —fourteen days—after exhibiting a number of symptoms similar to those caused by thyroidectomy, such as muscular tremors and spasms, and the development of a cachectic condition. Most physiologists, I fancy, will accept these experiments also with considerable hesitation. The very severe character of the operation necessary to reach the gland makes it questionable whether the results reported were due to its removal alone.

Szymonowicz, and also Oliver and Schäfer, report experiments upon the effects of injections of extracts of hypophysis into the circulation of normal animals. Szymonowicz states that in two experiments he obtained a slight fall of pressure and a quickening of the heart-beat. He concludes, therefore, that the physiologic action of these extracts is opposed to that caused by extracts of the suprarenals. Oliver and Schäfer, on the contrary, report that extracts of hypophysis exert an effect very similar in some ways to that shown by suprarenal extracts. For instance, they cause a marked rise of blood pressure, together with an augmentation of the heart-beat. Unlike the suprarenal extracts, however, they do not produce a slowing of the heart-rate when the vagi are intact. Upon the basis of these incomplete experiments, they draw the hasty conclusion that the hypophysis and the thyroid are not similar in function, and that the hypophysis is not capable of assuming vicariously the the activities of the thyroid.

I have recently made a number of experiments upon this organ, the results of which have been quite uniform, and in many respects very different from those obtained by the authors just quoted. My experiments were made with the hypophysis of sheep mainly, although at first the gland of the dog was used. The extracts were made in normal saline, or in glycerin followed by dilution with normal saline, and usually the fresh gland was employed. The experiments differed from those reported by others, in that extracts were made separately of the glandular and the infundibular lobe, and the physiologic effects of each were tested by injection into the circulation of normal dogs. It was found that the extracts of the glandular lobe have little or no perceptible effect when injected alone. Extracts of the small infundibular lobe, on the contrary, have a distinct and remarkable effect upon the heart-rate and blood pressure, an effect which resembles in some respects, and differs in others, from that shown by suprarenal extracts. Briefly stated, these extracts injected into the normal animal with its vagi intact cause a very pronounced slowing of the heart-beat, similar to that caused by suprarenal extracts, but lasting a much longer time. The heart-beat is not only slowed but is considerably augmented in force, as is shown by tracings taken with a Hürthle manometer. At the same time the blood pressure rises to a considerable extent, owing, apparently, to a peripheral constriction of the blood-vessels, since oncometer tracings from the kidney show that this organ shrinks greatly in volume. Usually the constriction of the blood-vessels occurs first, so that the pressure rises for about twenty millimeters or more of mercury. This is succeeded sometimes by a temporary fall of pressure during which the heart-rate may be increased, and then the slowing of the heart begins, while the pressure rises again to a greater or less extent above the normal. This last effect continues for a relatively long time, and passes off gradually. If the dose used is a maximal one, and a second injection is given too quickly afterward, little or no effect is obtained. If, however, the dose is not too strong, and sufficient time is given for its action to wear off, a repetition of the effects is obtained, and this may occur a number of times, although the effects decrease progressively in intensity.

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[1] Gley, *Archives de Physiologie Normale et Pathologique*, 1892, 311.

[2] Vassale and Sacchi, *Archives Ital. de Biologie*, xxi, cxxxiii, 1895.

The effects of the injection are somewhat different if the vagi are previously cut, or if a little atropin is given to paralyze the inhibitory fibers. Under these circumstances the slowing of the heart-rate is very much less marked, although not entirely lacking. In round numbers it may be said that, with the vagi intact, the heart-rate is reduced about fifty per cent., while in the atropinized animal the reduction is about twenty per cent. It might be added that an animal deeply under ether behaves in this respect like an animal with its vagi cut. This result indicates that the slowing of the heart-rate in a normal animal is due in part, but only in part, to a direct action on the medullary centers of the inhibitory fibers. On the other hand, the rise of blood pressure is greater. Usually the blood pressure rises rapidly for about twenty millimeters of mercury; this is succeeded in some cases by a temporary fall, and then the pressure again rises rapidly, reaching a height, in some cases, nearly equal to that caused by suprarenal extracts. During this last phase the heart-beats are somewhat slower and more powerful, the effect in this respect differing from that caused by suprarenal extracts. The effect lasts longer than with suprarenal extracts, and a longer interval must be allowed before a new injection will give the same result.

I have obtained a marked rise of pressure from injection of extracts of the infundibular lobe, after severance of the cord below the medulla, and in one case after entire removal of the thoracic part of the spinal cord in addition, thus indicating that the action of the blood-vessels is probably a peripheral effect, and not due to stimulation of the vasomotor centers. These observations that I present here only incompletely may be taken to indicate that the infundibular lobe of the hypophysis is, in all probability, not a rudimentary organ, but a structure that has some important physiologic activity. Moreover, its function is probably different from that of the grandular lobe, and possibly quite independent of it. With regard to the function of the glandular lobe, the method of injecting extracts into the circulation of a normal animal seems to teach us nothing. While the negative results thus obtained do not oppose, they cannot be said to support the favorite hypothesis that this part of the hypophysis cerebri has a function resembling that of the thyroid lobes. I venture to suggest that this supposed similarity in function might be tested most satisfactorily upon human beings by feeding the gland in cases of myxedema or goiter, and ascertaining whether a reaction similar to that caused by the thyroid can be obtained.

A CLINICAL STUDY OF THE ACTION OF THE NUCLEINS IN TUBERCULOSIS.

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In passing judgment on the value of the nucleins in the treatment of tuberculosis, and before forming too hasty conclusions from the report which I submit herewith, a few important facts regarding these products, their preparation and elaboration, and the technic of their administration must be considered in order that the true value of nuclein, as a therapeutic agent, may be estimated with some degree of fairness.

It is not within the scope of this paper, nor is it at all necessary here, to enter into an exhaustive account of the early history of these products, nor to go into details of their growth and elaboration to the stage of perfection which they have reached. The work on the nucleins pursued by Hoppe-Seyler, Miescher, Von Jaksch, Kossel, Altmann, Horbaczewski, Vaughan, and McClintock, has been ably reviewed in several masterly papers by Professor Vaughan and Dr. McClintock, notably in the annual address on medicine, "The Nucleins and Nuclein-therapy," delivered in 1894 at the meeting of the Michigan State Medical Society (see "Trans. Mich. State Med. Soc.," 1894), to which all have access; but it does seem necessary in considering the subject to remember that nuclein is a comparatively new therapeutic agent, scarcely three years having elapsed since its introduction. Again, it must be remembered that when first employed therapeutically the solutions obtainable contained many impurities which were afterward eliminated to a certain extent, and that the actual chemical value of the solutions was an uncertainty. This placed its hypodermic employment at a disadvantage, and made the estimation of the clinical value a slow process. Hypodermic medication in any event, involves special attention to the behavior of the patient, and to the general supportive treatment. Idiosyncrasies demand closer observation and attention, and especially when treatment is directed, as in the case of nuclein in tuberculosis, toward altering the process of normal metabolism. Furthemore, in tuberculosis we have to deal with a disease usually of very slow development, to change the course of which is at best, and under most favorable circumstances, a matter of considerable time. With all this in view it is perfectly obvious that a fair estimate of the value of any remedy directed to the cure of tuberculosis cannot be made from the clinical history of a single case, nor from that of any number of cases in the space of a few months.

Early in August, 1894, I began the employment of solutions of yeast nuclein in the treatment of tuberculosis in man, and until the present time I have felt that any report which I might make on the subject would neither be of value to the profession, or just to the remedy. In the following report I have made no attempt at a selection of cases, and I have endeavored in every instance to take a conservative view of the results as they were obtained, and to form no conclusions not founded upon demonstrable facts. The preparations of nuclein which I have employed in the treatment of the cases reported have been as follows: The original impure solution supposed to contain 2 per cent. of nucleinic acid (afterward found to contain much less than that); the improved 1-per-cent. solution, which was first obtainable in June, 1895 (the improvement consisting, according to Dr. McClintock, essentially, in the removal of a lot of impurities, for the most part albumins, and a considerable amount of coloring matter, the nature of which is unknown, but probably having some connection with the Xanthin bases); some 3-per-cent., and 10-per-cent. solutions, prepared for me through the kindness of Dr. McClintock, and the solution now obtainable containing 5 per cent. of nucleinic acid. All these have been solutions of *yeast* nuclein, and, although I have used them per os to a very limited extent as an adjunct to the hypodermic method, it is from the hypodermic employment that I have obtained the results reported below. Besides these solutions of yeast nuclein I have used a dry, powdered spleen nuclein per os, mainly as an adjunct to the hypodermic use of the solutions. This product, according to McClintock, contains about 6 per cent. of phosphorus, and is practically a pure nucleinic acid prepared from the spleen. I was enabled to obtain this product also through the courtesy of Dr. McClintock.

As regards the dosage and the technic of administration, I used the original impure solution in daily hypodermic injections of from 30 to 100 minims given at one dose. These injections of course occasioned considerable pain and induration at the point of injection, and often had to be discontined for a short time. The reaction generally was considerable, and in two instances was so severe that the treatment was abandoned as impracticable. These two cases are included among my "failures," so termed. As soon as the improvements before mentioned were made in the preparation of the solution I increased the dosage until in a few cases I reached 300 minims, injected hypodermically once daily. This dose, however, was too large in the majority of cases, causing considerable reaction attributive to the mechanical presence of so large an amount of fluid in the tissues, and I found that the best results were obtained from injections of from 100 to 200 minims.

In the case of the 3-per-cent. solution, which was the first strong solution employed, I made the injection daily of 100 mimims, with very little unpleasant reaction. The hypodermic use of the 10-per-cent. solution was wholly an experiment, and I began with 10 minims, increasing to 50 minims, and in two instances I injected 100 minims at a single dose. This was followed in both cases by such violent reaction, however, that I afterward never exceeded 50 minims at a single injection. This concentrated solution was used in four cases, all of which improved rapidly, but the care and attention to details of technic which the employment of this preparation necessitated convinced me that for practical purposes the more dilute solutions are preferable. Finally, I speak of the 5-per-cent. solution which has now been obtainable for some time. When first given to the profession it was intended for administration per os only, but I have always employed it hypodermically and have obtained far better results from it than from any other preparation of yeast nuclein which I have used. While having given as high as 100 minims at a single dose, I have found that in tuberculosis the best results are obtained from daily injections of 50 minims. It is unnecessary to add that in nuclein medication no arbitrary rules of dosage can be laid down. Good judgment and proper attention to idiosyncrasies, together with a suitable and appropriate supportive treatment, are essential to success.

In my experience, the portion of the body best adapted to the reception of the injection is, in the great majority of cases, the subcutaneous areolar tissue overlying the gluteal muscles. In some instances, they may with impunity be administered below the angles of the scapulæ, or low down in the axilæ. In the shoulders and breasts they cause more local disturbance, while in the arms, legs, or thighs, the injections occasion far more pain and local reaction than will be borne by patients generally, and especially by those not confined to bed. In making the injection, the surface of the part selected is exposed and sponged thoroughly with a 5-per-cent. solution of carbolic acid; the needle is then inserted its full length (one inch) at an angle of about seventy-five degrees, and the piston steadily pressed until all of the solution is injected. When the dose is 50 minims, fifteen seconds should be allowed for the injection. With the observance of these simple precautions the least possible pain is inflicted, and I have never had suppuration follow, except in one case, when it was directly attributable to lack of proper care of the needle. Patients should, of course, be supplied with their own needles. I have often been asked what nature of reaction might be expected to follow nuclein injections, and to what degree it might occur without contraindicating its employment. Leaving idiosyncrasies out of consideration, I have found that in the majority of cases the local reaction is merely one of mechanical disturbance dependent for its extent upon the *amount* of the solution injected. Dr. McClintock early pointed out to me the importance of the chemical reaction of the solutions used as affecting the irritation following the injection. I have not found any marked difference in the irritation produced by injections of solutions which are slightly acid, neutral, or slightly alkaline in reaction. A slight alkalinity of the solution is undoubtedly preferable because it is possibly less irritating, and because it is more readily absorbed. The symptomatic reaction varies in different cases. An injection of unusual size or concentration is followed by a rise of temperature of from .4° to 3° F., and a proportionate pulse-rate. This reaction is much less in degree if the maximum dosage is approached gradually. Rise of temperature and increase in pulse-rate are produced by hypodermic injections of nuclein solutions in healthy persons, as may be remarked in the experiments to be reported presently. After the injections have been repeated for a considerable number of consecutive days, patients sometimes complain of a "malarial aching" in the joints, and a feeling of general malaise, passing off later with the physiological accommodation which follows. These and various other subjective symptoms which are often observed to follow nucleinic medication are, in my opinion, due to the continued leucocytosis produced by the nuclein injections when often repeated.

In the following report I shall avoid as far as possible the tedium of exhaustive detail which a clinical account of a considerable number of cases at best involves, and limit myself to general results except when special interest requires more complete individual discussion. Suffice it to say that in the 37 cases reported there has been no question as to diagnosis. In all but 3, the diagnosis was confirmed by the presence of tubercle bacilli in the sputum or urine, or both. Two of these 3 were cases of tuberculous lymphangitis without pulmonary involvement, in 1 of which the diagnosis was made a number of years before by the microscopic appearance of one of the glands after surgical removal, while in the other diagnosis was confirmed by several eminent clinicians. In the third case, in which bacilli were not found, there was no expectoration, the process in the lungs never having gone beyond consolidation. It was pronounced tuberculosis upon the evidence presented by the physical signs, together with that of the personal and family history. The average age of the 37 patients was 31.2 years, the extremes being 16 and 61 years, respectively. Eighteen cases were complicated by tuberculous disease elsewhere than in the lungs; of these, as the report will show, 10 had tuberculous laryngitis, and of the remaining 8, 5 had nephritis, 2 had lymphangitis, and 1 had tuberculosis of the testes, and of one or more of the vertebræ.

Classification of patients suffering from tuberculosis is rather an unsatisfactory, not to say difficult, matter, and the plan which I have adopted does not fully meet the requirements of a finished statistical report, but I think it the least objectionable of any which does not involve individual record, and in a paper like the present it may be well to add that in every instance I have kept a complete clinical record, the important results of which are embodied in this report. I have classified the cases reported, (1) according to the length of time treated; (2) according to the stage which the disease had reached when treatment was begun, *i.e.*, incipient, advanced, and far advanced, and (3) according to the complications existing. Proceeding, therefore, under this classification, the first to be considered is:

Class I.—(10 patients treated one month or less.) (*a*) Incipient stage, 2; advanced stage, 3; far advanced stage, 5; (*b*) uncomplicated, 5; laryngeal complications, 3; other complications, 2.

Results in Class I.—Apparently cured, 1; disease arrested, 0; improved, 0; unimproved or failure, 9; died during treatment, 0; died since cessation of treatment, 5; present condition unknown, 1; known to be living, 4.

In this class, for obvious reasons, failure is the rule. In one case this was due to arbitrary unwillingness on the part of the patient to continue the injections, while in three cases nuclein was inadmissable on account of idiosyncrasies. Two of these three, as before mentioned, were under observation and treatment prior to the improvements made in the nuclein solutions. The majority of the failures reported in this, as in other classes, were expected from the first, the treatment being adopted more to gratify the desire of the patient than with any hope of success. Yet even in these forlorn patients I have occasionally seen the most marked temporary improvement follow the injections.

It might be well here to briefly explain what is meant by "apparently cured." In tuberculosis we have a pathologic condition which, after the incipient stage, is marked by destruction of tissue. It is clearly impossible to replace any part or the whole of a broken-down lung, but when we have assisted nature to throw out protecting adhesions, and procured a clean cicatrix in the place of a suppurating surface, it seems to me only reasonable to pronounce the result a cure, in the sense that surgical amputation for a gunshot wound of the knee-joint is a cure; but at the same time, since it is impossible to pronounce a tuberculous wound cured, even after the subsidence of morbid activity, until it has *remained* well for a reasonable length of time without relapse, and since I do not consider two years a sufficiently rigid time-test in these cases, I prefer to designate such cases as have given me this happy result in this way. This number embraces such as have ceased to show all physical manifestation of morbid activity.

I proceed now to the consideration of

Class II.—(12 patients treated from one to three months.) (*a*) Incipient stage, 3; advanced stage, 4; far advanced stage, 5; (*b*) uncomplicated, 7; laryngeal complications, 3; other complications, 2.

Results in Class II.—Apparently cured, 3; disease arrested, 2; improved, 4; unimproved or failure, 3; died during treatment, 1; died after cessation of treatment, 0; present condition unknown, 3; known to be living, 8.

Class III.—(12 patients treated from three to twelve months.) (*a*) Incipient stage, 1; advanced stage, 6; far advanced stage, 5; (*b*) uncomplicated, 4; laryngeal complications, 5; other complications, 3.

Results in Class III.—Apparently cured, 3; diseased arrested, 3; improved, 2; unimproved or failure, 4; died during treatment, 2; died after cessation of treatment, 3; present condition unknown, 0; known to be living, 7.

Class IV.—(3 patients treated for more than one year.) (*a*) Incipient stage, 1; advanced stage, 2; far advanced stage, 0; (*b*) uncomplicated, 3; laryngeal complications, 0; other complications, 0.

Results in Class IV.—Apparently cured, 1; disease arrested, 2; improved, 0; unimproved or failure, 0; died during treatment, 0; died after cessation of treatment, 0; present condition unknown, 2; known to be living, 3.

GENERAL SUMMARY.

Classification.—(37 patients treated.) (*a*) Incipient stage, 7; advanced stage, 15; far advanced stage, 15; (*b*) uncomplicated, 19; laryngeal complications, 10; other complications, 8.

General Results.—Apparently cured, 8; disease arrested, 7; improved, 6; unimproved or failure, 16; died during treatment, 3; died after cessation of treatment, 8; present condition unknown, 6; known to be living, 22.

Leaving out of consideration those cases reported under "disease arrested" and "improved" we have nearly 22 per cent. of apparent cures, a result which I cannot but consider eminently satisfactory. And it is worthy of consideration, also, that this result has been obtained without recourse to change of climate, in a portion of Michigan where the disease in question is notoriously prevalent. By far the majority of these patients were members of families of *very* limited means, unable to procure any of the luxuries and deprived of many of the necessities within reach of the rich. So far as was possible hygienic conditions were improved, and, as I have intimated, strict attention was given to the general supportive treatment and nutrition.

Now as to the effect of the treatment upon the prominent symptom of the disease. As regards the expectoration: Number of patients in whom the expectoration contained bacilli of tuberculosis: Before treatment, 34; after treatment, 26. Number of patients who had either no bacilli or no expectoration: Before treatment, 3; after treatment, 11. Number of patients who gained in weight under treatment, 16; number of patients who lost in weight under treatment, 11; number of patients whose weight was not recorded, 10.

I now desire to call attention to what I consider some very important observations relative to the comparative value of the blood in tuberculous patients treated with nuclein. Unfortunately, I delayed making these investigations in several cases until the patients had already been treated for some time, so that the gain or loss in those cases does not date from the commencement of the treatment. I will report the result in 10 cases, which I think will be a sufficient number upon which to base conclusions. The observations were taken in all cases at least twenty-four hours after the last previous treatment, and as far as possible all observations in the same patient were made under like conditions, that is, as to time of day, temperature, pulse, and intervals from the taking of food. The Thoma-Zeiss counting apparatus and Von Fleischl's hemoglobinometer were used in all cases.

CASE I.—Treatment begun May 2d. Daily hypodermic injections of 100 minims of a 1-per-cent. solution of yeast nuclein, and 10 grains of nucleinic acid from the spleen *per os*, three times daily. First examination, June 15th: Red corpuscles, 4,125,000 per c.mm.; white corpuscles, 9150 per c.mm.;

hemoglobin, 65 per cent. normal. Proportion of white to red corpuscles, 1:451. Second examination, one month later: Red corpuscles, 4,550,000 per c.mm.; white corpuscles, 9650 per c.mm.; hemoglobin, 90 per cent. normal. Proportion of white to red corpuscles, 1:471. An increase in red corpuscles of 425,000 per c.mm.; an increase of hemoglobin of 25 per cent. This case was one of "apparent cure."

Case II.—Treatment began May 22d, same as in last case reported. First examination, June 15th: Red corpuscles, 3,475,000 per c.mm.; white corpuscles, 12,900 per c.mm.; hemoglobin, 60 per cent. normal. Proportion of white to red corpuscles, 1:296. Second examination, fifteen days later: Red corpuscles, 3,650,000 per c.mm.; white corpuscles, 12,800 per c.mm.; hemoglobin, 55 per cent. normal. Proportion of white to red corpuscles, 1:285. (Numerous microcytes present.) An increase in red corpuscles of 175,000 per c.mm.; a loss in hemoglobin of 5 per cent. This case is reported among the "failures."

Case III.—Treatment began May 25th, same as in previous case. First examination, June 15th: Red corpuscles, 3,550,000 per c.mm.; white corpuscles, 15,000 per c.mm.; hemoglobin, 65 per cent. normal. Proportion of white to red corpuscles, 1:237. (Numerous poikilocytes present.) Second examination, one month later: Red corpuscles, 4,325,000 per c.mm.; white corpuscles, 15,600 per c.mm.; hemoglobin, 75 per cent. normal. Proportion of white to red corpuscles, 1:271. (No poikilocytes present.) Increase in red corpuscles of 875,000 per c.mm.; an increase in hemoglobin of 10 per cent. This case is reported as "disease arrested."

Case IV.—Not previously treated. Treatment consisted in injections every alternate day of 30 to 50 minims of a 5-per-cent. nuclein solution, and administration of the dry spleen nuclein, as in the other cases. First examination: Red corpuscles, 4,175,000 per c.mm.; white corpuscles, 8200 per c.mm.; hemoglobin, 80 per cent. normal. Proportion of white to red corpuscles, 1:509. Second examination, one month later: Red corpuscles, 3,550,000 per c.mm.; white corpuscles, 34,050 per c.mm.; hemoglobin, 70 per cent. normal. Proportion of white to red corpuscles, 1:104. (Numerous microcytes present.) Loss in red corpuscles of 625,000 per c.mm.; a loss in hemoglobin of 10 per cent. This case is reported among the "failures."

Case V.—Had been under treatment for one year. Treatment same as in case last reported, except that 50 minims of a 5-per-cent. nuclein solution were injected daily. First examination: Red corpuscles, 3,900,000 per c.mm.; white corpuscles, 8125 per c.mm.; hemoglobin, 80 per cent. normal. Proportion of white to red corpuscles, 1:480. (Poikilocytes present.) Second examination, five months later: Red corpuscles, 4,425,000 per c.mm.; white corpuscles, 10,900 per c.mm.; hemoglobin, 85 per cent. normal. Proportion of white to red corpuscles, 1:406. (No poikilocytes present.) An increase in red corpuscles of 525,000 per c.mm.; an increase of hemoglobin of 5 per cent. This case is reported as "disease arrested."

Case VI.—Not previously treated. Treatment same as in last case. First examination: Red corpuscles, 4,375,000 per c.mm.; white corpuscles, 12,500 per c.mm.; hemoglobin, 85 per cent. normal. Proportion of white to red corpuscles, 1:350. Second examination, one month later: Red corpuscles, 3,350,000 per c.mm.; white corpuscles, 11,550 per c.mm.; hemoglobin, 70 per cent. normal. Proportion of white to red corpuscles, 1:290. Loss in red corpuscles of 1,025,000 per c.mm.; a loss in hemoglobin of 15 per cent. This case is reported among the "failures."

Case VII.—Not previously treated. Treatment same as in last case. First examination: Red corpuscles, 3,275,000 per c.mm.; white corpuscles, 12,150 per c.mm.; hemoglobin, 50 per cent. normal. Proportion of white to red corpuscles, 1:269. Second examination, one month later: Red corpuscles, 4,650,000 per c.mm.; white corpuscles, 8000 per c.mm.; hemoglobin, 60 per cent. normal. Proportion of white to red corpuscles, 1:581. Increase in red corpuscles of 1,375,000 per c.mm.; an increase of hemoglobin of 10 per cent. This case is reported as "improved."

Case VIII.—Treated six days. Treatment same as in last case. First examination: Red corpuscles, 4,775,000 per c.mm.; white corpuscles, 17,150 per c.mm.; hemoglobin, 80 per cent. normal. Proportion of white to red corpuscles, 1:278. Second examination, three months later: Red corpuscles, 4,950,000 per c.mm.; white corpuscles, 13,100 per c.mm.; hemoglobin, 90 per cent. normal. Proportion of white to red corpuscles, 1:378. Increase of red corpuscles of 175,000 per c.mm.; an increase of hemoglobin of 10 per cent. This case is reported as "disease arrested."

Case IX.—Not previously treated. Treatment: Daily injection of 100 minims of a 3-per-cent. nuclein solution. First examination: Red corpuscles, 3,425,000 per c.mm.; hemoglobin, 90 per cent. normal. Second examination, six months later: Red corpuscles, 4,300,000 per c.mm.; hemoglobin, 100 per cent. normal. Increase in red corpuscles of 875,000 per c.mm; an increase of hemoglobin of 10 per cent. This case reported as "apparently cured."

Case X.—Not previously treated. Treatment: Daily injections of 50 minims of a 10-per-cent. nuclein solution. First examination: Red corpuscles, 4,125,000 per c.mm.; white corpuscles, 14,050 per c.mm.; hemoglobin, 65 per cent. normal. Proportion of white to red corpuscles, 1:222. Second examination, one month later: Red corpuscles, 5,050,000 per c.mm.; white corpuscles, 8125 per c.mm.; hemoglobin, 85 per cent. normal. Proportion of white to red corpuscles, 1:621. Increase in red corpuscles of 925,000 per c.mm.; an increase in hemoglobin of 20 per cent. This case is reported as "apparently cured."

Vaughan early pointed out that the nucleins, when introduced into the circulation, produced, in some manner not satisfactorily explained, a certain degree of leucocytosis, notably an increase in the number of the polynuclear cells, and to this action has been attributed the potency of the nucleins in tuberculosis rather more than to any germicidal properties which they themselves may possess. This, to my mind, is the most logical explanation of the remedial action of the nucleins in tuberculosis. To demonstrate, with an attempt at accuracy, the degree of leucocytosis produced by the hypodermic injection of yeast nucleinic solutions in tuberculosis, I made the following experiments upon six patients suffering from the disease, controlling the results by those obtained in the cases of two perfectly healthy adults (my wife and a trained nurse who kindly offered to assist me in this work). These experiments and observations were conducted with such attention to the details of technic as would insure for me the closest approach possible to perfect accuracy in results. In every instance the figures given represent the average of 256 cubic millimeters. This, in addition to the fact that the utmost care was taken regarding the dilution of the blood and the even mixture of the same, should, I believe, give a very exact estimation of the degree of leucocytosis produced, and the proportionate changes in the relative number of the mononuclear and polynuclear cells. Particular attention was paid to the state of the digestive organs, in order to insure the same conditions at the time of both examinations. The results were as follows:

SIX EXPERIMENTS UPON PATIENTS UNDER TREATMENT FOR TUBERCULOSIS.

Experiment I.—Before the injection, temperature, 99.1° F.; pulse, 76. Total number of leucocytes per c.mm., 10,900; number of mononuclear cells per c.mm., 5900; number of polynuclear cells per c.mm., 5000. Three hours after an injection of 50 minims of 5-per-cent. solution of nucleinic acid was given, temperature, 99.2° F.; pulse, 104. Total number of leucocytes per c.mm., 15,900; number of mononuclear cells per c.mm., 5600; number of polynuclear cells per c.mm., 10,300; increase in the total number of leucocytes per c.mm, 5000; loss in the number of mononuclear cells per c.mm., 300; increase in the number of polynuclear cells per c.mm., 5300.

Experiment II.—Before the injection, temperature, 98.8° F.; pulse, 84. Total number of leucocytes per c.mm., 13,100; number of mononuclear cells per c.mm., 6250; number of polynuclear cells per c.mm., 6850. Five hours after an injection of 50 minims of a 5-per-cent. solution of nucleinic acid was given, temperature, 99.6° F.; pulse, 84. Total number of leucocytes per c.mm., 18,100; number of mononuclear cells per c.mm., 5950; number of polynuclear cells per c.mm., 12,150; increase in the total number of leucocytes per c.mm., 5000; loss in the number of mononuclear cells per c.mm., 300; increase in the number of polynuclear cells per c.mm., 5300.

Experiment III.—Before injection, temperature, 99.6° F.; pulse, 104. Total number of leucocytes per c.mm., 9050; number of mononuclear cells per c.mm., 3750; number of polynuclear cells per c.mm., 5300. Five hours after an injection of 50 minims of a 5-per-cent. solution of nucleinic acid was given, temperature, 101.3° F.; pulse, 104. Total number of leucocytes per c.mm., 17,800; number of mononuclear cells per c.mm., 6550; number of polynuclear cells per c.mm., 11,250; increase in the total number of leucocytes per c.mm., 8750; increase in the number of mononuclear cells per c.mm., 2800; increase in the number of polynuclear cells per c.mm., 5950.

Experiment IV.—Before injection, temperature, 98.4° F.; pulse, 68. Total number of leucocytes per c.mm., 10,300; number of mononuclear cells per c.mm., 5650; number of polynuclear cells per c.mm., 4650. Four hours after an injection of 50 minims of a 5-per-cent. solution of nucleinic acid, temperature, 98.4° F.; pulse, 84. Total number of leucocytes per c.mm., 11,550; number of mononuclear cells per c.mm., 4400; number of polynuclear cells per c.mm., 7150; increase in the total number of leucocytes per c.mm., 1250; loss in the number of mononuclear cells per c.mm., 1250; increase in the number of polynuclear cells per c.mm., 2500.

Experiment V. — Before injection, temperature, 99.3° F.; pulse, 112. Total number of leucocytes per c.mm., 9050; number of mononuclear cells per c.mm., 6550; number of polynuclear cells per c.mm., 2500. Five hours after an injection of 50 minims of a 5-per-cent. solution of nucleinic acid, temperature, 101° F.; pulse, 120. Total number of leucocytes per c.mm., 11,850; number of mononuclear cells per c.mm., 3100; number of polynuclear cells per c.mm., 8750; increase in the total number of leucocytes per c.mm., 2800; loss in the number of mononuclear cells per c.mm., 3450; increase in the number of polynuclear cells per c.mm., 6200.

Experiment VI.—Before injection, temperature, 102.6° F.; pulse, 120. Total number of leucocytes per c.mm., 17,150; number of mononuclear cells per c.mm., 5300; number of polynuclear cells per c.mm., 11,850. Five hours after an injection of 50 minims of a 5-per-cent. solution of nucleinic acid, temperature, 101.1° F.; pulse, 112. Total number of leucocytes per c.mm., 19,050; number of mononuclear cells per c.mm., 10,000; number of polynuclear cells per c.mm., 9050; increase in the total number of leucocytes per c.mm., 1900; increase in the number of mononuclear cells per c.mm., 4700; loss in the number of polynuclear cells per c.mm., 2800.

TWO CONTROL EXPERIMENTS UPON HEALTHY ADULTS.

Experiment I. — Before injection, temperature, 98.8° F.; pulse, 80. Total number of leucocytes per c.mm., 6250; number of mononuclear cells per c.mm., 2500; number of polynuclear cells per c.mm., 3750. Five hours after an injection of 50 minims of a 5-per-cent. solution of nucleinic acid, temperature, 99.3 F.; pulse, 84. Total number of leucocytes per c.mm., 33,400; number of mononuclear cells per c.mm., 12,800; number of polynuclear cells per c.mm., 20,600; increase in the total number of leucocytes per c.mm., 27,150; increase in the number of mononuclear cells per c.mm., 10,300; increase in the number of polynuclear cells per c.mm., 16,850.

Experiment II. — Before injection, temperature, 98.4° F.; pulse, 65. Total number of leucocytes per c.mm., 5300; number of mononuclear cells per c.mm., 2800; number of polynuclear cells per c.mm., 2500. Five hours after an injection of 50 minims of a 5-per-cent. solution of nucleinic acid, temperature, 99.4° F.; pulse, 84. Total number of leucocytes per c.mm., 21,850; number of mononuclear cells per c.mm., 6550; number of polynuclear cells per c.mm., 15,300; increase in the total number of leucocytes per c.mm., 16,550; increase in the number of mononuclear cells per c.mm., 3750; increase in the number of polynuclear cells per c.mm., 12,800.

It will be observed that in these experiments the presence of yeast nuclein in the circulation produced leucocytosis in every instance; that in every instance, except one, the increase was markedly in favor of the polynuclear cells, which we may now regard as phagocytes; that where no morbid influences existed the phagocytosis was infinitely more marked, as was the general leucocytosis, there being (in the two control experiments) an increase in leucocytes of about 540 per cent. in the one case, and 412 per cent. in the other within five hours after an injection of 50 minims of a 5-per-cent. solution of nucleinic acid was given; and, finally, that during the exacerbations of a septic fever, when there is a pathologic leucocytosis, the effect of the nuclein is less marked, but quite in accord with the physiologic process.

I have made numerous other experiments and observations respecting the action of the nucleins in tuberculosis, some of them of considerable interest, but the limits of this article have been already reached, and my conclusions must be drawn from those which have already been reported.

My conclusions, then, are as follows: (1) Nuclein is in no sense of the word a *specific in tuberculosis* but a perfectly logical remedy which acts in unison with, and as a stimulant to, the physiologic function of animal resistance to the invasion of disease. (2) Indirectly (probably) nuclein acts as a stimulus to constructive metamorphosis, as may be seen by the increase in the number of red blood-corpuscles, and in the percentage of hemoglobin which follow its repeated injection. (3) The hypodermic employment of nuclein (excepting in the presence of idiosyncrasies) is well borne by the great majority of patients, and is not contraindicated in any stage of tuberculosis, although in those cases far advanced in the disease success, beyond allaying distressing symptoms, need not be expected. (4) The most satisfactory results in tuberculosis are to be obtained from injections of moderate size made in a single dose once daily. (5) Administration of the nuclein per os is of very doubtful benefit, and should be employed only as an adjunct to their hyperdermic use, or when circumstances preclude the possibility of the latter method being adopted. (6) Success in nuclein medication in tuberculosis in the great majority of cases can only be expected to follow a continued treatment extending over a considerable period of time. (7) The same care and attention should be bestowed upon the general supportive treatment when nuclein is used as when any other method of treatment is employed. (8) Finally, nuclein medication has given far better clinical results in tuberculosis (by actual statistics) than any other medicinal agent heretofore employed in the treatment of this disease.

In closing this report I desire again to call attention to the fact that, while nuclein has passed the stage of a medical "fad," it is still a comparatively new remedy which must be critically discussed by the profession. Those who employ it should be alert of observation, strict in their clinical records and conservative in forming conclusions. By observance of these precautions we may hope through a multitude of counsel to attain wisdom as to the true status of the nucleins in medicine.

More Dispensaries in New York Seeking Incorporation.—It is reported that the following institutions have filed applications for certificates of incorporation with the State Board of Charities: The St. Bartholomew's Clinic connected with St. Bartholomew's Episcopal Church, New York city; the hospital and dispensary of the Pasteur Institute of New York city, and the Rayson Day Nursery of New York city.

CLINICAL MEMORANDA.

APPENDICITIS WITH APHASIA.

BY W. C. COLE, M.D.,
OF JACKSONVILLE, ILL.

On December 6, 1893, I was called to see Samuel A., about thirty-two years of age, who, though not rugged, had always enjoyed good health. He was suffering from severe abdominal pain, which was most intense in the right iliac region. His temperature was 100° F. I gave anodynes sufficient to control pain, a cathartic and febrifuges, and ordered hot applications externally. My diagnosis was perityphlitis. The active symptoms lasted about ten days, during which time anodynes were required for the pain; otherwise, the patient was treated tentatively. He made an uneventful recovery, though a hard tumor about the size of a small lemon remained in his right groin for several months.

On July 14, 1894, seven months afterward, he came into my office complaining of colic. Without much examination or questioning I treated him, and gave him instructions to keep as quiet as possible, and if not better soon to let me hear from him. Four days later I was called, and again found him suffering intensely from pain in the right iliac region. He had considerable fever. In the course of a week a well-defined enlargement was easily made out over the seat of the appendix vermiformis. The patient now had become somewhat delirious and was difficult to manage. He was having frequent rigors, and his temperature was 103° F. On August 1st I aspirated the tumor and withdrew three-fourths of a pint of creamy-looking pus, and on the following day repeated the operation, again removing considerable pus.

At this juncture the patient appeared to recover to a considerable degree from his delirium, and in its stead a condition of aphasia developed. Dr. C. E. Black then saw the patient with me. We opened the abscess cavity freely and washed it out thoroughly with an antiseptic solution, repeating the washings two or three times a day for about six weeks. A few days after the opening of the abscess symptoms of paralysis of the entire right half of the body began to show themselves. The right lower extremity became very painful, and the leg from the knee downward was very much swollen. The patient during these six weeks was unable to make himself understood, except by motions, grunts, and grimaces. The evacuations from the bowels and bladder were almost continuously involuntary for a period of three or four weeks. About two weeks after the operation a tender spot appeared on the bottom of the heel of the right foot, which continued to extend in size until finally an oval-shaped piece, two by four inches became gangrenous and sloughed to a depth almost reaching the bone. I should have stated that, preceding the delirium, the patient complained for several days of a severe headache, especially affecting the back part of the head and neck.

It is now two and one-half years since the man developed this condition, and he still has slight aphasia, being unable at times to call persons or things with which he is familiar by their proper names. He also complains of some numbness in the right hand and foot, and says they are nearly always cold, or colder than the other side of the body. We are unable to determine just what part of the brain is affected, but, following the description of similar cases in which autopsies have been made, we feel safe in saying that the lesion is located in the lower posterior third of the left side.

REPORT OF AN INTERESTING CASE OF PNEUMONIA.

By G. METZLER, M.D.,
OF PHILADELPHIA.

On April 28, 1897, at 8 A.M., I was called to see John B., six years of age, who complained of severe pain in the cardiac region. On examination of the chest there was seen in the region of the heart an area, about the size of a hand, discolored blue. As the boy complained so much of pain, and as the dyspnea was so severe, a further examination of the chest was not then made. A towel wrung out in cold water was wrapped around the chest, encircling it three times. This was covered by a piece of blanket of the same size. The effect of this application was remarkable; the pain ceased at once, and the patient fell asleep. His temperature at that time was 101.3° F. It was learned from the parents that he had vomited severely, which was probably the cause of the blue discoloration in the cardiac region, either from venous engorgement, or more likely from the rupture of a small venule.

The patient was again seen at 5 P.M., and it was then possible to examine the entire chest. This examination revealed the presence of an infiltration of the left lower lobe of the lung, with all the accompanying symptoms of croupous pneumonia. The wet application to the entire chest was continued, and, in addition, an icebag was placed over the cardiac region, because it was suspected that the pericardium was implicated in the inflammatory process. The heart sounds, clear in the morning, were somewhat muffled in the evening. Internally, one-sixteenth of a grain of calomel was given every hour, and one-half drop of tincture of aconite every three hours. The temperature was 104.3° F. The following morning the dyspnea was still intense. The boy complained of a little pain in the region of the heart. On examination of the chest it was found that the right lower lobe of the lung was also affected. In the evening the patient was more calm and the dyspnea less intense. It was learned that he had perspired a little. Temperature, 103° F.

The next morning, April 30th, the whole scene was changed. There was no dyspnea and no pain. His temperature was 101° F. There was a mitral murmur. The boy coughed now more than during the two previous days, and the sputum was streaked with blood. He was given tincture of digitalis (two drops) in elixir of cinchona, every three hours. The mitral murmur disappeared after three days.

The case seems worthy of note, because of its peculiar beginning, its rapid termination, and the decidedly beneficent action of the hydropathic treatment. In a disease so prevalent as pneumonia, and in which there is so little agreement between physicians as to the proper treatment, it seems that one is not only justified, but should be obliged to make public his experience in the treatment of just such cases as this one. Opium, venesection, dry or wet cups are recommended to relieve pain. I have used all these measures, and in some cases with good results. Bloodletting, however, in any form is not advisable in the case of a child; and as regards opium, this drug may be used, but if there are other measures which give equal beneficial results they should be used instead, as any interference with the excretory powers of the economy may lead to a fatal turn of the disease. In a disease which is determined in a few days, for good or for bad, it is all-important to keep the excretory organs in good condition, and, if need be, to stimulate them, so as to give free vent to the toxins circulating in the organism.

MEDICAL PROGRESS.

The Anatomy of the Ureters.—According to SCHWALBE in the *Centralbl. f. d. Med. Wissensch.*, Nov. 21, 1896, the human ureter is properly to be considered as having an abdominal and pelvic portion; in the former there is constantly present a fusiform dilatation lying just above the pelvic brim, called the greater dilatation. At its upper end, usually distant from the pelvis of the kidneys about seventy millimeters, is the narrowest part of the ureter, the "superior isthmus." At the junction of the abdominal and pelvic portions is the "inferior isthmus."

In the pelvic portion of the ureter, smaller fusiform dilatations can also be demonstrated. The right ureter is shorter, and has a more marked superior dilatation than the left. In the female these characteristics are more distinct than in the male. The two portions of the ureter join each other at an angle of 135°. This angle is a little sharper on the right side.

Investigations in quadrupeds show that in them the ureter has throughout a uniform caliber with no angle at the pelvic brim. In animals, which sometimes assume a vertical position—for instance, monkeys—there is a slight angle, and also a very slight fusiform dilatation above it. As a result of these observations, Schwalbe concludes that the superior dilatation is to be regarded as a compensatory dilatation, produced by the obstruction to the flow of the urine caused by the angle at the pelvic brim.

The Symptoms of Typhoid Lesions in the Large Intestine.—When the lesions of typhoid fever predominate in the large intestine they usually produce a group of symptoms from which it is possible to recognize this special localization of the disease. These cases are rare, and a diagnosis is seldom made. According to HENRIOT, an abstract of whose study of this subject appears in the *Gaz. Heb. de Med. et de Chir.*, Nov. 22, 1896, the following symptoms are characteristic:

1. Diarrhea is the most common symptom. It is profuse, often involuntary, and very fetid, presenting in general the characteristics of ordinary typhoid stools, though these may be more watery and have less color.

2. Meteorism is a less valuable symptom, as it occurs in numberless cases of typhoid fever with lesions in the small intestine.

3. The pain is located sometimes at one point and sometimes at another, and sometimes throughout the whole course of the large intestine. This symptom is rarely absent when there are ulcerations, but it is often necessary to examine the patient with reference to its existence, and in certain cases abdominal pressure reveals its presence, although the patient does not complain of any tenderness if not disturbed.

4. The general condition is very bad.

The prognosis in these cases is unfavorable.

THERAPEUTIC NOTES.

For Renal Colic.—

℞	Lycetol	gr. xv
	Bicarbonate of soda	gr. viiss

M. Ft. Chart No. 1.

To be taken morning and evening, dissolved in a glass of mineral water.—*Wittzack.*

How to Administer Oily Enemata.—Oil has of late been administered by the rectum with good results to patients worn out by wasting diseases. The best method of administration is not yet agreed upon. Deucher, who has experimented extensively along this line, reports in the *Semaine Medicale*, April 9, 1897, that the maximum of absorption is attained with an emulsion of equal parts of oil and a solution of sodium carbonate to which is added a little sodium chlorid. The whole is administered at the temperature of the body.

An Efficient Application for Psoriasis is the following:

℞	Chrysarobin Ichthyol } aa	gr. xx
	Acid salicylic	gr. viii
	Oxid of zinc ointment	ʒ iiiss
	Vaselin	q.s. ad ℥ i

M. Sig. Remove scales and rub in ointment for half an hour. Leave the ointment on during the night and bathe in the morning.—*Unna.*

A Useful Combination for the Pain of Herpes Zoster:

℞	Alcohol	℥ i
	Menthol	gr. xv
	Ext. cannabis indica	gr. xxv

M. Sig. Apply by means of pads made of wadding, which should be frequently renewed during the day.—*Leloir.*

Furunculosis is benefited by the following plaster:

℞	Acid salicylic	ʒ ii
	Soap plaster	℥ ii
	Diachylon plaster	℥ i

M. Sig. Apply spread on cloth.—*Heitzman.*

An Excellent Application for Pruritus of the Vulva:

℞	Chloroform	ʒ ii
	Amygdalin oil	℥ ii

M. Sig. Apply as necessary.—*Scanzoni.*

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SATURDAY, MAY 22, 1897.

THE MALT EXTRACT OF THE PHARMACOPEIA AND THE MALT EXTRACT OF THE STREET-CARS.

AN interesting article by Harrington, published in the *Boston Medical and Surgical Journal*, December 31, 1896, reminds us that the term malt extract was originally used to denote a honey-like substance extracted from malted barley, containing no alcohol, but having a high percentage of sugar and dextrin, and about two per cent. of the ferment diastase, one part of which will convert 2000 parts of starch to glucose and dextrin. On account of the last property it has been widely prescribed to assist the digestion of starchy food.

But this old definition of a malt extract, owing to the efforts of the brewers, has recently given way very largely to the idea that a malt extract is a liquid preparation, more or less effervescent, to be drunk by the glass or *ad libitum* with meals or on retiring. The value of these preparations in digestive, respiratory, nervous, and other troubles, and especially as a food for nursing mothers, is alleged with great vehemence in advertisements, while in every street-car are pictures of opera-singers, actors, professional beauties, athletes, warriors, and statesmen of both the Eastern and Western hemispheres, who attribute their success in life to the unstinted use of one or the other of these preparations. An analysis of twenty-one of these extracts as made by Harrington is so instructive that it is printed in full:

TABLE I.

Brand.	Specific Gravity.	Alcohol.	Total Residue.	Ash.
Beefmalt	1.0523	1.56	13.066	0.428
Gahm's Malt Extract	1.0156	6.07	6.328	0.232
Hercules Malt Wine	1.0378	6.07	11.634	0.528
Herculine Extract of Malt	1.0149	3.29	5.130	0.202
Hoff's (Eisner & Mendelsohn)	1.0313	2.56	8.187	0.197
Hoff's (Tarrant's)	1.0288	4.37	6.862	0.262
Leicester's English Malt Extract	1.0263	2.83	8.040	0.238
Liquid Bread	1.0168	5.37	6.180	0.214
Malt-Nutrine	1.0555	0.74	13.630	0.250
Malt Wine (Haffenreffer & Co.)	1.0279	4.25	8.666	0.200
Menzel's Extract of Malt	1.0193	3.59	6.310	0.280
Mulford's Digestive Malt Extract	1.0196	1.31	6.632	0.250
Noris Extract of Malt	1.0387	3.88	11.455	0.256
Old Grist Mill Malt Extract	1.0383	3.82	11.060	0.260
Pabst Malt Extract	1.0280	4.10	8.666	0.312
Pasteurized Extract of Malted Barley	1.0156	3.88	5.280	0.230
Puremalt	1.0271	5.56	8.436	0.466
Teutonic	1.0286	6.28	9.458	0.398
Vitamalt	1.0222	4.69	7.206	0.264
Wampole's Extract of Malt	1.0257	7.13	9.534	0.386
Wyeth's Extract of Malt	1.0540	1.37	12.656	0.390

Diastase absent in all of the above brands.

TABLE II.

Brand.	Specific Gravity.	Alcohol.	Total Residue.	Ash.
Milwaukee Beer	1.0173	4.12	6.220	0.182
Culmbacher Beer (Domestic)	1.0305	5.06	9.742	0.362
Pale Ale (English)	1.0064	5.62	4 080	0.344
Porter (Irish)	1.0151	6.14	6.194	0.474

It will be observed that no one of these preparations contains a trace of diastase; that six of them contain over five per cent. of alcohol (more than ordinary beer contains), while only six of them have more sugar than domestic beer. Many of them contain salicylic acid. From an economic standpoint they possess no advantage over beer, ale, or porter. On the contrary, according to the size of the bottle and price asked, the consumer obtains for ten cents from 100 to 250 c.c. of malt extract; of imported ale or porter he obtains from 220 to 260 c.c., while of domestic beer he receives from 800 to 840 c.c.

THE NEW YORK UNIVERSITY BELLEVUE HOSPITAL MEDICAL COLLEGE—ORGANIZATION OF THE FACULTY.

THE announcement of the names of the men who will compose the faculty of this newly organized medical school has been awaited with no little expectancy, not only by the parties particularly interested, but by the whole profession. It was recognized by all that the selection of a faculty was, under the circumstances, a most delicate procedure. There was no dearth of material; on the contrary, the situation that confronted the appointing power was *l'embarras de richesses*. It was impossible to find positions for all the members of the two original organizations.

The point about which the keenest interest centered was whether the Council would be guided in each selection by the uncompromising spirit of the best man for the place, or whether its judgment would be swayed by such considerations as family and finance. The terms under which the consolidation was affected guaranteed fair and considerate treatment of both organized parties to the contract, and yet the necessities of the case demanded compromise. In such transactions the danger is that in the effort to satisfy all no one is pleased.

The plan adopted by the Council was a somewhat novel one, and displayed a master stroke of diplomacy in shifting the responsibility to the shoulders of the former professors and making each one of them actually elect, not only himself, but his fellows. This was accomplished by inviting each professor to send in a confidential ballot nominating members of a complete faculty, it being understood that he himself was already in nomination for his own chair. The selection was not to be limited to the faculties of the two colleges, or to New York city. Nominations were thus made for the forty-one professorships in the nineteen departments of the consolidated institution. In the two faculties there had been fifty professors. The result of the balloting was that nine-tenths of the faculty chosen by the university corporation received the support of a majority of both the old faculties. Six members were made professors emeritus, five of whom were active professors last year.

In a delicate negotiation of this nature it is inevitable that there will be some disappointments, but, on the whole, it must be acknowledged that the Council has met the ordeal in a manner that commands the approval of every candid critic.

This new institution may now be considered organized; it only remains to adjust the details of its domestic economy, adapt its present buildings to the new exigencies, and erect such additional structures as the new conditions require.

Extensive plans for new buildings are under consideration. Since the consolidation of the two colleges, the University has acquired a large additional plot of ground on Twenty-fifth street, just south of the buildings already owned by it. This plot measures 100 feet in depth by 175 feet in length. The plan for its improvement contemplates two courts with an east building, a center building, and a south building. The center and east buildings will be erected soon.

Henceforth New York city will possess two of the largest and best-equipped medical schools in this country, if not in the world: the College of Physicians and Surgeons on the west side of the city and the newly organized institution on the east side. Each is provided in its immediate vicinity with ample hospital facilities and abundant clinical material; each one has allied itself with a strong and wealthy university; the requirements for admission and graduation are equally exacting, and on the parallel lines along which they must inevitably develop, a healthy, generous rivalry will stimulate to the loftiest ambitions and the noblest aims.

ECHOES AND NEWS.

A New Remedy for Gout.—An English physician claims that regular daily traveling in railway cars has a hygienic value, and is especially beneficial in cases of gout.

The International Congress at Moscow.—It is announced that the Russian railways have generously decided to grant free passes to members of the Congress, thus greatly reducing the expenses of the journey.

A "Kneipp Cure" Sanitarium in Vermont.—The American Kneipp Cure Company of New Jersey, proposes to open its first Kneipp-cure sanitarium at Middletown Springs, Vt. The company is capitalized at $1,000,000. Middletown Springs is now a popular summer resort known for pure air and water, and the Kneipp-cure people propose to change the name to Kneippville.

The New York Morgue-Keeper Found Guilty,—The Board of Charities has reached a decision in the case of Morgue-Keeper Albert M. White, who was tried by the board three weeks ago on a charge preferred on December 5, 1896, that he had illegally disposed of bodies committed to his care. The members of the board are unanimous in the decision that White is guilty as charged, and they have dismissed him from his position.

Extraordinary Death of a Physician.—Dr. Carrier of Varennes, France, has recently died under painful circumstances. The daughter of a patient to whom he had given a hypodermic injection of morphin, seeing her mother very quiet, thought she was dead, and cried out that the doctor had poisoned her. Dr. Carrier was seized with a fainting fit, and, as he fell, struck his head against the mantelpiece, receiving injuries which resulted in his death a few hours later, just as the patient awoke, much relieved by her peaceful sleep.

The Roentgen Ray in Surgery.—At the Instituto Fisico of the university at Pavia, Italy, the entire tibia of the left leg of a boy patient having been removed, a series of object lessons on the reproduction of the lost bone were initiated, with the help of the Röntgen ray. The organic functions of the osseous tissues, as illustrated in the reproductive process, were watched and registered at stated intervals, and the value of the Röntgen ray in surgical diagnosis and treatment, and equally in surgical teaching, was vindicated in the most striking manner.

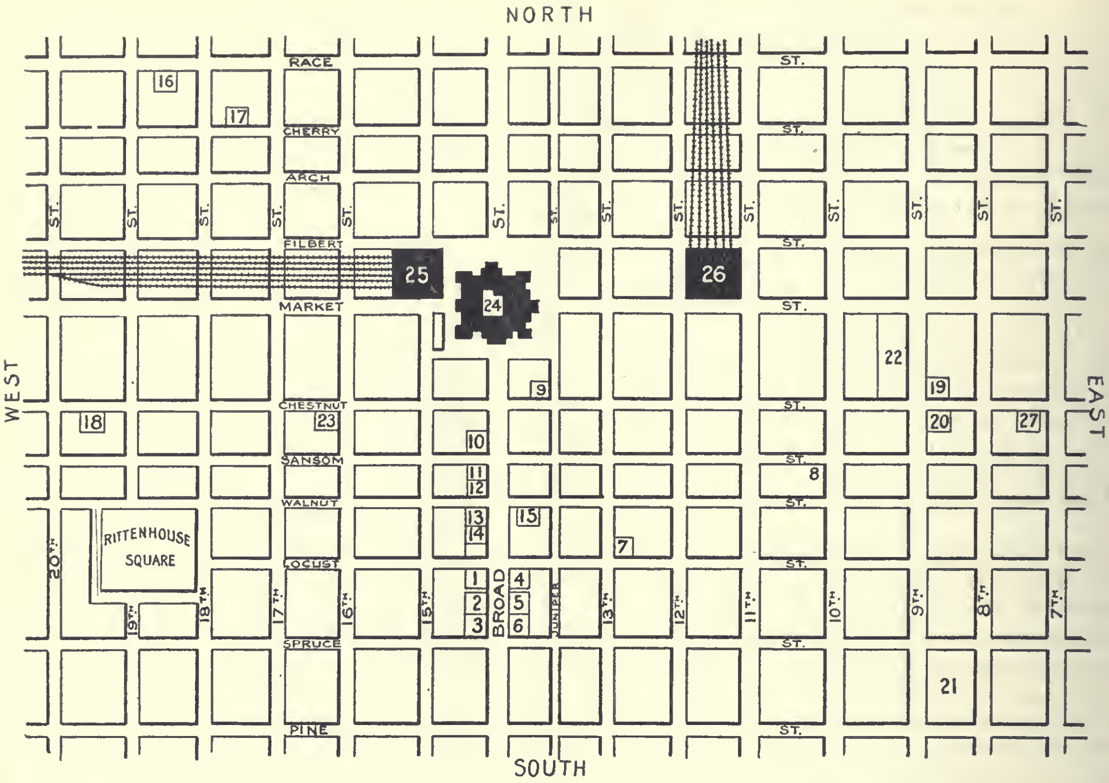
Report of New York Prison Commission.—In the recent report of the State Commission on Prisons regarding the condition of the penal institutions of New York city are some statements of unusual interest. The investigation revealed the fact that only five per cent. of the youths between the ages of sixteen and nineteen awaiting trial before the courts of New York are sent to the Tombs. Ninety-five per cent. of these youthful offenders are cared for by Mr. Gerry's society. In the Kings County Penitentiary, the commission reports, the bath-rooms are new and excellent, being so arranged that, while forty may bathe at the same time, each person is in a separate booth, or stall, with a separate dressing closet for each; yet all are subject to the surveillance of the keepers. The plan could well be copied in other prisons.

Parrots as Sources of Tubercular Infection.—Bronchopneumonia has assumed almost an epidemic form in Genoa, Italy, caused, it is believed, by infected parrots brought from Brazil. Fourteen persons have been attacked by it, and eight have died. The susceptibility of the parrot to all lung diseases, above all to tuberculosis, is being widely discussed by the medical journals. In Berlin the profession has long been alive to the danger of harboring and petting the parrot, as the malady is often hereditary in the bird, and is aggravated by the close confinement of the voyage to Europe—even after arrival it is, for the most part, exposed to unsanitary conditions, under which it contracts tuberculosis and bronchopneumonia from human sufferers from these ailments. The Veterinary School has had 154 parrots under observation, and fifty-four of them have been found, by bacteriologic tests, to be suffering from advanced tuberculosis.

Mr. Lawson Tait and Hospital Abuse.—The Birmingham *Daily Post* gives Mr. Lawson Tait's views on hospital reform: "We (the profession) are entirely responsible for hospitals, and for all their faults as well as their merits." He maintains that the medical officers of the Birmingham Hospital could make an end of the trouble in a month. As a temporary expedient, he suggests that they should assign thirty per cent. of their income accruing from hospital positions for the assistance of their "struggling extramural brethren." The *Lancet*, commenting on this says: "We are sure the 'struggling brethren' would decline any such remedy. All they ask from their hospital colleagues is to use their influence to restrict the benefits of hospital treatment to those who need it and cannot afford to pay for it. Neither is it of any use to lay the whole blame on hospital honorary officers. The committees and governors of hospitals are equal, or greater culprits."

Obituary.—Dr. George W. Burdett died in Clinton, Mass., May 10th. He was seventy-six years of age, and was a graduate of Dartmouth Medical School and of Harvard Medical School. He was for many years a member of the Board of Directors for the Bigelow Free Public Library, and had been Master of the Trinity Lodge of Free and Accepted Masons.—Dr. Elisha Munger of New London, Conn., died May 14th, after ten weeks of suffering, following an operation for appendicitis. He was forty-nine years old, and for a quarter of a century practised medicine in New London county, commencing at East Lynn, and afterward removing to the city, where he had lived for nine years.—Dr. Magitot, who was the founder in France of modern dentistry, and wrote many important works upon the development of the teeth, died recently very suddenly during an attack of angina pectoris. He was a member of the Academy of Medicine, and had been president of the Society of Anthropology.—Mr. Louis Pascal Casella died at Highgate, England, April 23d, aged eighty-six years. Mr. Casella was the first to construct a registering clinical thermometer.

A Controversy in the Medical Society of New Haven, Conn.—On the Faculty of the Yale Medical School is Dr. B. A. Cheney, whose father is a homeopathic physician. The younger physician has made repeated attempts to become a member of the regular local society, and, it is asserted by his friends, has been unjustly kept out on the alleged ground of homeopathic affiliations. One of the prominent physicians opposing Dr. Cheney's admission has been Dr. F. E. Beckwith of New Haven, one of the leading obstetrical specialists in the State, and formerly connected with the Yale Medical School. At a recent meeting of the Medical Society Drs. Osborne and L. W. Bacon of the Yale School, as a counter-thrust, and with the evident intent of carrying the war into Africa, preferred charges against Dr. Beckwith of consultation with local homeopathic physicians. The charges were referred to a committee of three, which found that Dr. Beckwith had consulted with homeopaths only in emergency cases, and reported by a majority vote in his favor, one of the committee, however, favoring expulsion. The vote of the society stood 33 to 17 in Dr. Beckwith's favor. A striking feature of the case was the appearance of Dr. Francis Bacon as leading defender of Dr. Beckwith, while Dr. L. W. Bacon, his nephew, in the Yale Medical School, led Dr. Beckwith's foes. To a disinterested observer the affair has the flavor of a tempest in a teapot, and carries the earmarks of personal retaliation.



MAP INDICATING POINTS OF INTEREST AT THE COMING MEETING OF THE AMERICAN MEDICAL ASSOCIATION AT PHILADELPHIA.

REFERENCES TO THE ABOVE MAP.

1. Academy of Music.
2. Horticultural Hall.
3. Beth-Eden Church.
4. Hotel Walton.
5. South Broad Street Theater.
6. Hotel Stenton.
7. College of Physicians.
8. Jefferson Medical College and Hospital.

The University of Pennsylvania is situated in West Philadelphia, direct communication with which is had by Chester avenue car going west on Walnut street.

9. U. S. Mint.
10. Lafayette Hotel.
11. Union League Club.
12. Hotel Bellevue.
13. The Stratford Hotel.
14. The Art Club.
15. University Club.
16. Wills Eye Hospital.
17. Medico-Chirurgical College.
18. Aldine Hotel.
19. Girard House.
20. Continental Hotel.
21. Pennsylvania Hospital.
22. Post-office Building.
23. Colonnade Hotel.
24. Public Buildings.
25. Pennsylvania Railroad Depot.
26. Philadelphia & Reading Depot.
27. Publication office *The American Journal of the Medical Sciences*, Lea Bros. & Co.

MEETING PLACES.

General Meetings, Academy of Music; hours, 10 A.M. to 1 P.M. daily.

Registration Office, Horticultural Hall (lower corridor).

Post-office, Horticultural Hall (outer vestibule).

SECTIONS.

Practice of Medicine, Broad Street Theater.

Surgery and Anatomy, Horticultural Hall (lower hall).

Obstetrics and Gynecology, Beth-Eden Church.

Neurology and Medical Jurisprudence, Beth-Eden Church (upper room).

Ophthalmology, Hotel Walton (tenth floor).

Laryngology and Otology, Hotel Walton (tenth floor).

Materia Medica and Pharmacy, Academy of Music (Blue Room).

Diseases of Children, Academy of Music (Foyer).

State Medicine, Academy of Music (Red Room).

Dermatology and Syphilography, Horticultural Hall (Foyer).

Physiology and Dietetics, Hotel Stenton.

Dental and Oral Surgery, Hotel Walton (Parlor D).

All Sections meet at 9 A.M. and 3 P.M.

The exhibition of books, pharmaceutical preparations, and surgical instruments will be given in the main hall, Horticultural Hall, immediately adjoining the Academy of Music.

Notes of Interest Regarding the Coming Meeting of the American Medical Association at Philadelphia.—The semi-centennial meeting of the American Medical Association will take place at Philadelphia on Tuesday, Wednesday, Thursday and Friday, June 1st to 4th. The general meeting will be opened on Tuesday by the introduction of the venerable Dr. Nathan S. Davis, of Chicago, attended by the presidents of the State medical societies, and he will deliver an address, entitled "A Brief History of the Origin of the American Medical Association, the Principles on which it Was Organized, the Objects it Was Designed to Accomplish, and How far they Have Been Attained during the Half-Century of its Existence." The President of the Association is Dr. Nicholas Senn of Chicago, and the First Vice-President Surgeon-General George M. Sternberg.

It is expected that nearly 3000 delegates will attend this memorable meeting, and the profession of Philadelphia has made great preparations for their reception, not only from a social, but even more particularly, from a scientific standpoint. Arrangements have been made for special courses at the various colleges so that delegates may, however briefly, become acquainted with recent medical processes. The committee in charge has found it possible to arrange for the general and sectional meetings to take place in the buildings situated within a single block on Broad street, *i. e.*, that block extending from Locust street to Spruce street. The position of these various buildings, and of the different hotels which offer special rates to the members of the Association, is shown on the accompanying map, which may prove of much use to those readers of THE MEDICAL NEWS who intend to be present at the meeting. At the southeast corner of Broad and Locust streets is situated the Hotel Walton which will be the headquarters of the Association and in which three of the sections will meet. Immediately adjoining it to the south is the Broad Street Theater with a large seating capacity which will be devoted to the Section of Practice of Medicine. Adjoining it to the south is the Hotel Stenton in which the meetings of the Section of Physiology and Dietetics will be held. Immediately opposite, at the northwest corner of Broad and Spruce streets, is the Beth-Eden Church, which, in addition to its ordinary accommodations, contains a large meeting-room. This building will be used by the sections of Obstetrics and Gynecology, and of Neurology and Medical Jurisprudence. Immediately across from the Broad Street Theatre is Horticultural Hall, a newly erected building, exceedingly handsome in its inside and outside decoration, the main hall of which will be devoted to exhibition purposes. This hall also contains two large meeting-rooms which will be devoted to the sections of Surgery and Anatomy and of Dermatology and Syphilography. Finally, the Academy of Music, immediately adjoining Horticultural Hall, and which is capable of seating nearly 3000 persons, has been engaged for the general meeting. Smaller rooms in the same building will be used for the sections of Diseases of Children, of Materia Medica and Pharmacy and of State Medicine.

These places of meeting are also situated close to the College of Physicians at the corner of Locust and Thirteenth streets, an institution which has the largest medical library in the United States next to that of the Surgeon-General's Office at Washington, Most of the important clubs are also within a few hundred yards of the hotel headquarters. It will also be noticed that the meeting places are but three blocks away from the Broad Street Station of the Pennsylvania Railroad and but four blocks from the Terminal Station of the Reading Railroad.

Several luncheons will be given each day under various auspices. The dinners of the various sections will take place on Tuesday evening at 7 o'clock, and on Wednesday evening the University of Pennsylvania, the Union League Club, Jefferson Medical College, the Academy of Fine Arts and other institutions will hold receptions. On Thursday afternoon the Provost of the University of Pennsylvania, Mr. C. C. Harrison, will receive the delegates on the campus of the University, and several private lunches will also be given on the same day. The publishers of the MEDICAL NEWS, Messrs. Lea Brothers & Co., have invited the visiting delegates and their wives to a theater-party on Thursday evening, at the Broad Street Theatre, at which refreshments will be served. On Friday the Philadelphia Medical Club will give a luncheon at the Hotel Aldine, and on that afternoon the meeting will come to a close.

Vital Statistics in England and Wales.—The Registrar-General of Births, Deaths, and Marriages in England and Wales has just issued his report for 1895. The following are some of the more generally interesting facts contained in it. The population was 30,383,047—14,721,820 males and 15,661,227 females. The number of marriages registered was 228,204, corresponding to a rate of 15 persons married per 1000 living, against 15.1 per 1000 in the previous year, and an average of 14.9 in the ten years 1885–'94. The slight fall in the marriage-rate, as compared with that of 1894, was accompanied by a rise of 4 per cent. in the value of British exports, a rise of 1 per cent. in the value of imports, and a rise of 1 per cent. in the average price of wheat per quarter. Of the 228,204 marriages, 156,469, or 686 per 1000, were celebrated according to the rites of the Church of England, and 71,735, or 314 per 1000, otherwise. These proportions are exactly the same as those of 1894. Of each 1000 men married during the year 1895, 891 were bachelors and 109 widowers; of each 1000 women married, 924 were spinsters and 76 widows. The births registered during the year numbered 922,291, and were equal to a rate of 30.4 per 1000 persons living, or .8 below the average rate in the preceding ten years. The births of males numbered 468,886, and the births of females 453,405, the former bearing to the latter the proportion of 1034 to 1000, against an average proportion of 1037 to 1000 in the preceding decennium. The excess of male over female births has shown a general tendency to decline ever since the year 1841. The deaths registered during the year numbered 568,997, and were in the proportion of 18.7 per 1000 of the population. Although the rate showed an increase of 2.1 per 1000 upon the unprecedented low rate of 1894, it was slightly below the mean rate (18.9) of the ten preceding years 1885–'94. The 568,997 deaths included 290,704 males and 278,293 females. The death-rate among males was therefore equal to 19.7, and that among females to 18.7 per 1000 living of the corresponding sex. Out of equal numbers living there were 1111 deaths of males to 1000 deaths of females, against a mean proportion of 1121 in the ten years 1885–'94.

CORRESPONDENCE.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

JEFFERSON MEDICAL COLLEGE COMMENCEMENT—CLASS-DAY EXERCISES AT THE MEDICO-CHIRURGICAL COLLEGE—DR. W. S. HALSTED—A PAY-HOSPITAL FOR CONTAGIOUS DISEASES—A SUMMER LABORATORY COURSE.

PHILADELPHIA, May 15, 1897.

THE seventy-second annual commencement of the Jefferson Medical College was held in the Academy of Music on May 14th, and the degree of Doctor of Medicine conferred upon 161 members of the graduating class by the Hon. William Potter, President of the Board of Trustees. The opening prayer was made by the Rev. Allen B. Philputt, D.D., and an address was delivered by the Rev. Francis L. Patton, President of Princeton University, whose remarks contained much that may be remembered with profit by the newly graduated physicians. Prof. E. E. Montgomery gave the valedictory to the class. He spoke of the value of the graded curriculum which they had followed, contrasting its advantages with the training received by medical students in years past, and referred to the long list of men famous in medicine and in surgery, who have helped to give to their *alma mater* her enviable position among medical schools.

The annual banquet of the Alumni Association of the Jefferson Medical College was given on the evening of May 13th, at the Hotel Bellevue. Dr. H. A. Hare, the toastmaster of the evening, introduced Mr. James P. Townsend, who spoke for the Board of Trustees. Dr. A. H. Hulshizer made a report on the fund for the equipment of the new pathological laboratories of the college, which showed that a total of $7000 had been subscribed for this purpose. Other speeches were made by Dr. George McClellan, who responded to the toast, "The Alumni Association"; by Mr. Hampton L. Carson, giving a sketch of the famous medical men of Philadelphia from Penn's time to the present day; by Prof. W. W. Keen, for the faculty; by Prof. H. A. Wilson, for the clinical faculty, and by Dr. E. Q. Thornton, on behalf of the demonstrators of the college. Several hundred alumni were present, and the banquet was considered one of the most successful ever held.

As a prelude to the commencement exercises of the Medico-Chirurgical College, to be held next week, the Class-Day exercises of the graduating class of this institution were observed on May 13th. Speeches were made by Prof. Isaac Ott, Dean of the Faculty, and by Messrs. A. C. Morgan, the Class President; J. A. McKenna, the Class Historian, and A. C. Buckley, the Valedictorian.

A dinner and reception were given to Dr. William S. Halsted of Baltimore, on May 13th, by Dr. W. W. Keen, at the University Club.

At a meeting of the Philadelphia County Medical Society, held on May 12th, Dr. J. Madison Taylor, Chairman of the Joint Committee of the County Medical Society, and the Woman's Health Protective Association of Philadelphia, on the proposed pay-hospital for contagious diseases, made a report of the work accomplished by this body toward securing this much-needed institution. The site recommended for the hospital is that at present occupied by the Municipal Hospital for Contagious Diseases, in a section of the city where, by reason of the proximity of two railroads, a residence neighborhood is unlikely to be built up. The need of a pay-hospital of this kind, where patients may be attended by their own physicians, was shown to exist, and encouraging progress in the movement was reported.

Dr. Edward Rosenthal read a paper on "The Municipal Hospital of Philadelphia," in which he described the new diphtheria pavilion, which has recently been added, and suggested other improvements, notably a building for suspected cases, and also the purchasing of more ground adjacent to the institution, to be used temporarily as a park for the patients. In the discussion of Dr. Rosenthal's paper, a communication from Dr. Benjamin Lee was read, highly praising the diphtheria pavilion, and suggesting that, as the State Board of Health had decided to place measles among the diseases to be quarantined, a building for this class of patients should be provided, in order to prevent their coming in contact with other contagious diseases. Dr. William Welch spoke of the need of money for necessary improvements at the Municipal Hospital, and urged that smallpox cases be cared for in a building in some remote locality. On motion by Dr. John Ashhurst, Jr., a committee was appointed to draft a resolution of the Society's approval of the present site of the Municipal Hospital, and requesting the city councils to make more liberal appropriations to carry on the work of treating the city's cases of infectious disease.

A summer laboratory course, lasting from May 1st until July 1st, has been inaugurated at the Medico-Chirurgical College, under the direction of Prof. Joseph McFarland. The work, which is open to both undergraduate and post-graduate students, includes bacteriology, morbid anatomy and histology, autopsies, toxicology, medical chemistry, and clinical microscopy.

OUR VIENNA LETTER.

[From our Special Correspondent.]

KOCH'S RECENT PUBLICATION ON TUBERCULIN AND AUSTRIAN OPINIONS OF IT—THE THYROID AND CONGENITAL ANOMALIES—THE BOTANIC SPECIFIC PATHOGENEITY OF MICROBES TO BE DISCUSSED AT THE INTERNATIONAL MEDICAL CONGRESS AT MOSCOW—VASELIN FOR ERYSIPELAS—DOCTORS' FEES IN VIENNA.

VIENNA, April 15, 1897.

THE interest displayed in Vienna in Koch's latest publication on tuberculin and its diagnostic and therapeutic possibilities serves to show the prominent position the "Dean of Bacteriology" occupies in the German medical world. Every one of the many Viennese medical journals published detailed abstracts from the report within a few days of its appearance, and most of them in addition had editorial comments. The very limited applicability, as far as therapeutics are concerned, claimed for the tuberculin, even by its inventor, seems to be a source of general disappointment. The proofs of its diagnostic value very early in the course of tuberculosis, before the slightest positive physical signs are present, are very cordially welcomed. Vienna, whose death-rate from tuberculosis is comparatively very high, ought to furnish an excellent field for the confirmation and further development of this part of the master's work.

The attitude of the political press in the matter seems worthy of note. Most of the papers have printed notices and comments, but usually in but few words. Some of them, however, do not seem ready to forget their overreaching enthusiasm when the first announcement of the discovery of tuberculin was made some six years ago, and the melancholy disappointment which followed it. There have been some sarcastic comments. One of the journals suggests that the date of the publication, April 1st, is not without significance, and that it is not this time to be taken too seriously. One of the comic papers, in a rhymed skit, announces a cure for tubercle, but not in men; only in rabbits and guinea-pigs. It is the old story the world over: the public generally cannot appreciate the slow and sure progress of true science, but demand immediate results and carp at the little that each advance really means while there still remains so much to be done. Notoriety is the earmark of humbug, and the press, in default of something better, is ready to exploit the latest medical fad or the pet theory of someone who is not as visionary as he seems, but has an eye only for the main chance. It is reassuring and not wholly without a sense of compensatory universality that one finds that the spirit is not confined to America alone.

The rôle of the thyroid or parathyroids would seem, according to a series of observations reported to the Vienna Medical Society on April 5th, to be even wider than that so far accorded them. Nearly all the cases of dwarfed development that came under the observer's notice, even when seemingly entirely unassociated with any symptoms of myxedema, had as an accompaniment errors of development of the thyroid. Many congenital anomalies, especially the more serious ones, would seem to be likewise associated with defects, either atrophic or hypertrophic, of this important gland. Something of this may be due to the fact that effect is taken for cause, and that anomalies of the thyroid, by defect or exaggeration, are present when other anomalies occur; but there seems in addition to be good grounds for thinking that the glandular malformation is primary and causative.

The question of the botanic specificity of microbes, which is to take up some of the attention of the coming International Medical Congress at Moscow in August, is, to all appearances, going to bring out a series of striking contributions to the principles that underly the infant science of bacteriology. Not all of them will be confirmatory of a number of theories that have so far been generally accepted. There is even more than a hint given that some of the papers will be rather revolutionary in character, and that the basis on which a good deal of work has been done as regards the specific pathogeneity of certain bacterial forms will be materially modified, and perhaps entirely swept away.

The position of the French school, especially of the great bacteriologists at the Pasteur Institute—Duclaux, Metchnikoff, and Roux—with regard to the specific pathogeneity of certain bacterial forms that have, until recently, been universally accepted as undoubtedly specifically causative of disease is well known. The cholera and typhoid bacilli, perhaps even the diphtheria bacillus, and others, would seem to have lost some of the reputation for specificity that has been accorded them so long.

The Austrian school, as represented here at Vienna, would seem to have decided tendencies in the same direction. Closely in touch as they are with German scientific matters all over the German Empire, because of a common mother-tongue, the Vienna school may be looked upon as understanding thoroughly the state of mind generally of German-speaking bacteriologists. There is an almost universal air of expectancy in the matter, and hints are dropped of interesting developments. The outcome cannot fail to be of unusual interest for scientific medicine generally and bacteriology and hygiene in particular.

A series of cases of erysipelas treated with applications of simple vaselin, with excellent results, have just been reported to one of the medical journals here. One can look at the report in two ways, I suppose; either vaselin has been developing therapeutic properties hitherto undreamed of (and then one could accept the report seriously and proceed to treat his next case of the disease in this way, with good or ill success according to whether his state of mind is distrusting or confiding), or one might remember that erysipelas, being as a rule self-limited and running a definite course, has enjoyed the privilege of having at one time or another half the drugs in the pharmacopeia vaunted as specifics for it, and so let the matter drop. Meantime, it is encouraging to find that it is not only in America, completely benighted medically as it would seem to be to most German and Austrian medical men, that long-since exploited therapeutic measures find their way into the medical journals with the specious testimony of a series of cases which test their value.

A good deal of attention has been devoted in the medical journals here, and by the public generally, to the question of doctors' fees. Until a recent decision of the *Arzt-Kammer*, there has been no regularly recognized fee for medical services in Austria. A legal decision was given some fifty years ago, I believe, when money was of much greater value than it is now, which empowered the physician to collect 50 kreutzers (about 20 cents) for each professional visit. The taking of legal steps for the collection of a bill has been generally looked upon as almost, if not quite, unprofessional. The *Arzt-Kammer*, a sort of representative body that in different districts in Austria regulates the relations of physicians with each other and with their patients, and has power to make certain rules and inflict certain penalties, has lately attempted to obviate some of the difficulties that almost necessarily arose under this state of affairs by announcing the legal fee that a doctor could demand for a professional visit within a certain radius. The amount was set at 3 gulden ($1.20), though less could be asked where the circumstances of the patient would not allow him to pay this much. The decision has raised a storm of comment, a good deal of it being unfavorable. The public does not seem to like to be reminded that physicians' fees are rights and not merely the material expression of a grateful patient's feelings. Some of the doctors have been inclined to think the decision inopportune, while others have expressed the opinion that the fixing of the fee, though at the price that it has been the custom generally to give and ask, would react against the physicians themselves and really lessen the amounts that might be paid by certain patients. To an outsider this does not appear probable, while the definite fixing of a fee would seem to have its advantages.

The discussion brings out the fact, however, that physicians are even worse paid here than among ourselves, and a profound feeling of justifiable dissatisfaction at the state of affairs has taken hold of the profession. The comparison with the honoraria paid to other professional men is not calculated to lessen this feeling. As has been said here, "In no profession is there such a disproportion between the quality and amount of work done and the reward obtained. Taking merely the material labor, how many visits must not a doctor make, and how many steps must he not climb for 1000 gulden! Yet he is, and must be, one of the most highly educated of professional men." It would seem as though the world-wide dissatisfaction in this connection must lead very soon to the development of a better state of mind in the general public as regards the rewards to be given the physician for his skill and labor.

SOCIETY PROCEEDINGS.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twelfth Annual Meeting, Held at Washington, D. C., May 4, 5, and 6, 1897.

(Continued from page 617.)

THIRD DAY—MAY 6TH.

THE RELATION OF NEURASTHENIC CONDITIONS TO THE GENERAL NUTRITION,

was the title of a paper by DR. R. T. EDES of Jamaica Plain, Mass.

He held that gain in body weight and improvement in neurasthenic symptoms usually go together, but that there are enough exceptions to the rule to show that the nervous nutrition is something more than a mere sample of the general. The more symptoms approach in character the "fixed idea" of the insane the less amenable are they to the beneficial effect of mere somatic therapeutics. The blood color of a considerable number of neurasthenic patients corresponded quite closely with that of the employees in the same institution. It is not possible to establish any correspondence between the degrees of anemia and the intensity of nervous symptoms. Measurements of the excretion of uric acid afford no sufficient ground for supposing that neurasthenic symptoms depend in any way upon this substance. There may be such a thing as a chronic uric-acid headache, but the ordinary continued neurasthenic headache is not of this character. Indican determinations have not been numerous enough to be decisive, but do not seem to indicate that the poison consists in this substance or in those which may be transformed into it. If neurasthenia is a toxic condition, the poison has not yet been satisfactorily identified.

DISCUSSION.

DR. JAMES J. PUTNAM corroborated the statement that patients might look very pale and yet have a normal percentage of hemoglobin. As to the influence of uric acid upon the causation of the disease he is still in doubt. It is not safe as yet to give a name to the agent which causes the condition, but we are learning more and more every day that the pathology of nervous disturbances may be connected with changes in metabolism. Study of cases of epilepsy must cause a good deal of doubt to arise as to whether the changes which are found are the cause of epileptic attacks or the result of them.

A paper, entitled

REFLEX NEUROSES OF THE ABDOMEN,

was read by DR. NORMAN BRIDGE of Los Angeles, Cal.

The paper set forth, from a clinical standpoint, a large number of cases of reflex neuroses or symptoms, such as urticaria, pruritus ani, convulsions in children, etc., which were simply reflex manifestations of abdominal disorders. He desired to call attention to the fact that these symptoms are often reflex in origin, for they are frequently overlooked, and often tend to confusion in diagnosis.

DISCUSSION.

DR. CHARLES G. STOCKTON said that the "postprandial diarrhea" of which Dr. Bridge had spoken occurs with sufficient frequency to entitle it to a special name. In addition to the hurried evacuations, there is almost invariably a gastric anacidity. These two symptoms are peculiar. In each of the cases which he had seen there were striking errors in the accommodation of the eyes. He did not mean to assert that these conditions were dependent upon this ocular error, but he thought it had some influence. A second point which he wished to refer to was the subject of pigment neuroses. These can often be explained by some condition of the stomach, intestines, or kidneys, and he had seen relief of this condition follow the replacement of a displaced kidney.

A paper on

THE ROENTGEN RAYS IN THORACIC DISEASE,

was read by DR. FRANCIS H. WILLIAMS of Boston.

This paper was a sequel to one presented by the author at the last meeting of the Association, and illustrated the progress which a year has witnessed in the utilization of these rays. The paper was illustrated with skiagraphs showing diseased conditions of the lungs and heart. The rays were especially serviceable in pneumonia, pleurisy, and tuberculosis of the lungs, enlarged heart, and pericarditis with effusion. Skiagraphs of the leg were also presented, showing not only the bones, but also the tendons, nerves, and blood-vessels.

DISCUSSION.

Dr. Fitz of Boston showed several skiagraphs of two cases of aneurism of the aorta. The question had been raised of the transmissibility of the X-rays through calcareous substances, but he had succeeded in illustrating the possibility of photographing renal calculi. These rays also make possible the diagnosis of obscure cases of pelvic disease.

A CASE OF ACROMEGALY

was reported by **Dr. O. T. Osborne** of New Haven.

Dr. W. H. Welch of Baltimore introduced Dr. Osborne, who is not a member, to the Association, and asked that he be allowed to present some pathologic specimens from a case of acromegaly which had been under his care, the patient having recently died. The patient had had the disease twenty-three years, and two photographs—one taken in 1887 and the other in 1892—gave a graphic description of the progress of the disease during that time. The man was 5 feet 9 inches in height, and had a marked kyphosis, which took several inches off his stature. At death he weighed 300 pounds. The brain was normal, but the heart was enormously enlarged, weighing 2 pounds 9 ounces—one of the largest hearts on record. The thyroid weighed 101 grams, but contained only one-twentieth of the normal amount of iodin. An internal thyroid was found, very much smaller than the other, but containing twice the amount of iodin. Photographs of the different parts of the skeleton, placed side by side with corresponding portions of the skeleton of a normal 6-foot man, were exhibited, and showed very clearly the enormous increase in the size of the bony skeleton.

THE CHEMICAL PROPERTIES OF THE BLOOD-PRESSURE-RAISING CONSTITUENTS OF THE SUPRARENAL CAPSULE,

was the title of a paper by **Dr. John J. Abel** of Baltimore.

Dr. Abel described the fruitless efforts of Vulpian and more recent investigators to isolate the chemic constituents of the suprarenal capsule that gave to it its blood-pressure-raising power. He then told of his experiments in the same line, and described the technic by which he finally succeeded in isolating what appeared to be the active principle of the suprarenal capsule from an aqueous solution of the gland. He exhibited sphygmographic charts showing the marked increase in blood pressure following the administration of this active principle, and also the less marked increase following the administration of the aqueous extract.

DISCUSSION.

Dr. William Osler asked Dr. Abel whether he had examined any of the commercial extract of the suprarenal capsule now on the market with reference to their blood-raising properties. He had several cases of Addison's disease which he had been treating with a commercial extract of the suprarenal gland, but so far without effect.

Dr. Abel replied that he had not examined any of them, but he thought it very likely that they did contain this blood-raising principle. It was only necessary to chop up the gland and powder it.

ON THE OCCURRENCE OF THE FAT-SPLITTING FERMENT IN PERITONEAL FAT NECROSES.

A paper with this title was read by **Dr. Simon Flexner** of Baltimore.

He said that upon the etiology of peritoneal fat necrosis much light has recently been shed, partly through the findings in cases occurring in human beings and partly through animal experimentation. A study of the cases in the literature would make it appear that the occurrence of fat necrosis was not always due to the same cause. Although infection seems in certain cases to play a part, it is probable that it is not by any means the most important factor. The view has gained ground that the disseminated forms of necrosis met with in the peritoneal cavity, as well as the more circumscribed lesions in the pancreas itself, may result from a perversion of the pancreatic secretion. Again, since it has been shown that trypsin, when injected into the peritoneal cavity, does not set up this condition, the suggestion that the fat-splitting constituent of the secretion, steapsin, might possibly prove to be the chief cause, has been ventured. In the literature no record occurs of any attempt to demonstrate the presence of this body in the areas of necrosis, and it is possible that investigators were deterred by the belief in its extreme sensitiveness.

DISCUSSION.

Dr. W. H. Welch said that some years ago he had brought before the Association a case of necrosis of the pancreas in which a micro-organism was present. This was the first time on record that the colon bacillus had been demonstrated in the pancreas. Cultures were made of the colon bacillus, and presented to the Association, and he had remarked that this organism had nothing to do with the fat necrosis.

A report on "Further Studies upon the Pathogenic Spirilla of the Schuylkill River at Philadelphia" was made by **Drs. A. C. Abbot** and **D. H. Bergey** of Philadelphia.

This paper was a continuation of one read by Dr. Abbot at the last meeting of the Association, and was a record of the progress made in the demonstration of pathogenic spirilla in the drinking water of Philadelphia. A spirillum had been found resembling the spirillum of cholera in most particulars, but differing from it in a few points.

DISCUSSION.

Dr. George M. Sternberg said he considered the discovery of this spirillum in the water of the Schuylkill, at a time when there was no cholera in the country, and had not been for years, one of great importance. If the discovery had been made at a time when cholera prevailed here, this would undoubtedly have been considered the bacillus of that disease.

ON THE APPEARANCE OF CERTAIN AMEBA-LIKE BODIES IN THE BLOOD OF VACCINATED MONKEYS (RHŒSUS) AND CHILDREN, AND IN THE BLOOD OF VARIOLA. AN EXPERIMENTAL STUDY.

A paper on this subject was read by DR. WALTER REED of Washington.

Following the introduction of Koch's improved methods, the search for the specific causative agent of vaccinia had been made especially along the line of bacteriologic research. Notwithstanding many claims of positive results, these had in the end proved groundless. During the past ten years, and more especially during the last half decade, the attention of investigators had been turned toward the possibility of the animal nature of the parasite. Van Der Lœff, L. Pfeiffer, Rieck, and more recently Ogata, had described minute bodies always present in vaccine and variolous lymph, which they assign to the sporozoa. The first attempt to cultivate the supposed parasite of vaccine lymph was made in 1892 by Guarnieri, who used the cornea of guinea pigs and rabbits for this purpose. After forty-eight hours, epithelial scrapings trom the inoculated cornea, suspended in a hanging drop of aqueous humor, showed little shining slowly ameboid bodies, often with irregular margins, within the epithelial cells. Guarnieri considered these bodies to belong to the Protozoa, and called the parasite citoryctes vaccinæ.

Dr. Read's own experiments confirmed in some respects Pfeiffer's observations. Bodies of a corresponding size and ameboid in character appear in the blood of vaccinated monkeys about the 7th and disappear about the 12th day. The same bodies are found in the blood of vaccinated negro children, but were much more differcult to find in the blood of white children, and in several cases of the latter could not be discovered. Bodies of a like nature, though differing somewhat, were found in the blood of three (3) small-pox patients during the height of fever, disappearing later.

AN EPIDEMIC OF CEREBROSPINAL MENINGITIS CAUSED BY THE DIPLOCOCCUS INTRACELLULARIS MENINGITIDIS (JÆGER).

(*a*) Clinical Report; by DR. F. H. WILLIAMS of Boston.

(*b*) Pathological Report, by DR. WM. T. COUNCILMAN of Boston.

This joint paper described from both clinical and pathologic standpoints an epidemic of cerebrospinal meningitis occurring in the Boston City Hospital, and in which the diplococcus intracellularis meningitidis had been shown to be the cause. An account of the experiments undertaken with a culture of this bacillus was also given.

DISCUSSION.

DR. GUITERAS said he had two cases of the disease to report, but he regretted that he could not give the details as yet. One had occurred within the past fifteen days in the University Hospital, Philadelphia, the patient being a nurse in the hospital. He hoped to publish the details shortly. The second case occurred a few days days ago in a new-born infant, and so seemed to contradict one of the statements of Dr. Councilman.

DR. F. H. WILLIAMS said that the lumbar puncture was valuable, chiefly as a means of diagnosis. Moreover, it did sometimes give relief, but only temporarily.

DR. GEORGE M. STERNBERG asked whether any of the cases had recovered.

DR. WILLIAMS replied that seventy per cent. died.

DR. COUNCILMAN said that an interesting feature in regard to the character of the exudation, which he had meant to bring out, was that it had a marked tendency to extend along the cranial nerve, and along the optic nerve almost to the eye. The auditory nerve was also followed into the foramen. In consequence of these complications there had been loss of sight and hearing in some of the patients who recovered.

DR. F. C. SHATTUCK said that his experience with this epidemic embraced fifteen cases. A peculiar thing in his cases was that not a child died and not an adult recovered.

A CASE OF LEVANT FEVER

was reported by DR. A. A. SMITH of New York.

He gave the details of a case contracted upon the Mediterranean and treated by him in New York. The fever lasted three or four weeks, then came a period of freedom from fever, and then a period of relapse. The fever, while resembling malaria in many particulars, differed from it in that it resisted quinin in doses of twenty to ninety grains a day, whether given by the mouth or hypodermically. Anemia was not marked. The time cycle of levant fever differs from that of any form of malarial fever, being shorter than the tertian, which completes the cycle every forty-eight hours. The parasite of levant fever is larger than that of malarial fever. The only form of malarial fever with which it can be confused is the estivo-autumnal variety.

DISCUSSION.

DR. F. C. SHATTUCK asked whether arsenic had been tried.

DR. SMITH replied that every form of antimalarial medicine had been resorted to except phenic acid.

DR. GEORGE DOCK said that the diagram of the blood-cells which had been shown resembled those of malarial fever without pigment, though many observers were skeptical of the existence of such forms.

A paper on

THE EARLIEST POSSIBLE RECOGNITION OF TUBERCULOSIS,

was read by DR. JAS. T. WHITTAKER of Cincinnati.

It discussed the treatment of tuberculosis by tuberculin. Tuberculin had been objected to on the ground that its use in man had given the reaction when there were no symptoms of tuberculosis, but these should be regarded as cases of concealed tuberculosis. In lupus, actinomycosis, and allied diseases, tuberculin has produced cures. Doses of from one to ten milligrams were especially useful for their diagnostic effect. The author had never seen untoward symptoms follow the administration of even very large doses. As much as one gram had been given at a single dose in actinomycosis without producing bad effects. He had used it in 1000 cases and had never seen unpleasant symptoms follow. He believed that early cases of tuberculosis are amenable to cure by Koch's improved tuberculin.

DISCUSSION.

DR. F. C. SHATTUCK said that tuberculin was being used in the Massachusetts General Hospital for its diagnostic effects. So far as his experience goes it seems to be innocuous. Cases have been found to react to tuberculin when there were no evidences of tuberculosis, and it has been difficult to account for such cases. As an example he cited the case of a girl of twenty years who had an epigastric tumor, and it seemed improbable that it could be of a malignant nature. She reacted to tuberculin, which led to the suspicion that the tumor might be tuberculous. Later she died, and the autopsy showed that she had a sarcoma. She had, however, a tubercular nodule at the apex of the right lung.

DR. A. LAWRENCE MASON said that tuberculin had been used at the Boston City Hospital for its diagnostic properties for some years. He thought it especially valuable as an aid to diagnosis in cases of suspected tuberculous peritonitis, and as a guide to the necessity of doing laparotomies in such cases.

SOME PRODUCTS OF THE TUBERCULOSIS BACILLUS AND THE TREATMENT OF EXPERIMENTAL TUBERCULOSIS BY ANTITOXIC SERUM,

was the title of a paper by **DR. E. A. DE SCHWEINITZ** of Washington.

A description was first given of two of the products obtained from tuberculosis cultures, one of these a crystallizable acid, and its probable bearing upon the progress of the disease. A brief sketch of some experiments showing the relationship of the attenuated tuberculosis bacillus to immunity was given, followed by a description of methods for the production of antitoxic serum and its experimental application.

A paper, entitled

A FURTHER STUDY OF SOME OF THE UNTOWARD EFFECTS OF THE BROMIDS,

was read by **DR. H. A. HARE** of Philadelphia.

The author prefaced his paper with the statement that he had been led to an investigation of this subject by the remarks of Dr. S. Weir Mitchell at the last meeting of the Association. He had thought that those remarks were based upon original observations, but he had learned from correspondence with the superintendents of asylums that the subject was an old one with them. The paper was based largely upon the answers of asylum superintendents to a circular letter, and a summary showed most of them were of the belief that the administration of the bromids led to alienation and delusions. Many of them reported that the nervous symptoms ceased when the drug was discontinued. It was not the opinion that the bromids produced insanity or epilepsy, but that when given in such cases it led to the development of suicidal or homicidal mania.

DISCUSSION.

DR. H. C. WOOD said that maniacal delirium is quite common after the administration of the bromids and that it is peculiarly common in the case of epileptics. Persons subject to epilepsy are very apt to suffer from maniacal nerve storms, in which they develop suicidal or homicidal tendencies after the administration of the bromids.

DR. I. E. ATKINSON was of the opinion that the conclusions of the asylum superintendents, cited by Dr. Hare, rested upon incorrect reasoning, and thought that the attacks of mania spoken of are merely the manifestations of the epilepsy in a different form, and not the result of the bromids. Another point which he wished to make was that bromid of ammonia is far superior to the bromid of potassium or soda.

DR. HARE, in conclusion, said that nearly every asylum superintendent who had written to him ended his letter by expressing the hope that he would succeed in impressing upon the general practitioner a realization of the dangerous nature of the bromids. The first thing done when a patient enters an asylum is to get him over the effects of the bromids which have been given to quiet him. The effort is always to build up the system and cut off the bromids entirely. He did not think that these untoward effects are due especially to the bromid of potassium, but that the general depressing effect of the bromin on the general health tends to an increased mental unbalance.

The following papers were read by title :

THE EFFECTS OF VARIOUS METALS AND METALLIC SALTS ON THE GROWTH OF CERTAIN BACTERIA ;

a continuation of a similar paper read before the Association of American Physicians, May 30, 1894. By **DRS. B. MEADE BOLTON** and **W. G. BROWN** of Columbia, Mo.

A CASE OF ADENOMA ON THE LIVER WITH COMPLICATIONS,

by **DR. A. JACOBI** of New York.

THE TREATMENT OF LITHEMIA,

by **DR. B. L. RACHFORD** of Cincinnati.

PRIMARY TUBERCULOSIS OF THE KIDNEY,

by **DR. D. D. STEWART** of Philadelphia.

The following officers were elected : President, F. W. Shattuck ; Vice-President, G. Baumgarten ; Recorder, I. Minis Hays ; Secretary, Henry Hun ; Treasurer, W. W. Johnston ; Member of Council, M. A. Starr.

The following honorary members were elected : Samuel C. Chew, and F. T. Miles, Baltimore.

The following active members were elected : Arthur C. Cushney, Ann Arbor ; W. S. Thayer, Baltimore ; Ludwig Hektoen, Chicago.

AMERICAN SURGICAL ASSOCIATION.

Eighteenth Annual Meeting, Held at Washington, D. C., May 4, 5, and 6, 1897.

THIRD DAY—MAY 6TH.

(Continued from page 614.)

DR. W. W. KEEN, in discussing Dr. Tiffany's paper on "Intracranial Surgery," said that he considered disinfection in these cases of great importance. He referred to the fact that he had observed abroad in certain places that no disinfection was performed until the moment of operation, and spoke rather unfavorably of this practice. He stated that the size of the opening in the skull depends largely upon what it is necessary to do, and recommended Pyle's chisels as being the best instruments with which to make the opening. According to his experience, there were a number of objections to the use of the dental engine, but when used he considered Cryer's the best. Referring to osteoplastic operations, he stated that he had replaced the bone in probably fifteen different places, some of them being as large as 1½ inches in diameter, without any bad results, but advised that these replacements be done with the utmost care. He always keeps the pieces of bone that have been removed in a 1 to 2000 solution of bichlorid of mercury at a temperature of from 100° to 150° F., placing therein a thermometer and detailing one nurse to exclusively attend to it. If the pieces of bone are not replaced, the membrane will fill up the aperture and leave a depression which in the case of the forehead is quite objectionable.

He favored performing these operations in two stages, at a interval of from one to two months, under ordinary circumstances, although in some cases not more than three or four days should be allowed to elapse. In his opinion the greatest danger in re-opening a wound is the risk of infection. The two principal factors in cerebral surgery are the time that elapses during the opening of the skull and the hemorrhage, and he referred to a recent case in which almost every possible means of controlling hemorrhage failed until it was feared the patient would die on the table. A previous operation was performed on the same patient, and also a subsequent one without this alarming symptom presenting itself.

Dr. Robert Weir of New York also referred to the question of hemorrhage, and stated that he employs one or two moderate-sized hat pins over which he places two or three stout rubber bands, and these, with the occasional use of the clamp, and sometimes of a band around the head, usually control it. To a large extent he has given up the use of the chisel in these operations, and especially in the cases of a thick skull. He rarely resorts to osteoplastic operation at the present time, and prefers to allow for intracranal pressure. Of late years he has preferred the electric saw for these operations. In closing these wounds he stated that he is in the habit of using a celluloid plate and reported a case in which good results have been maintained for five years.

Dr. J. Parmenter of Buffalo preferred the gouge and hammer to the chisel for opening the skull, and believed that the dangers are less. Speaking of the surgical engine and the electric saw, he did not see any objection to their use if the cranial bones are vascular, but if they are not, necrosis will follow. As to controlling hemorrhage, he prefers a modification of Dr. Weir's method, and considers the forceps the best instrument for crushing bone. He thought the practice of palpating the intracranial structures a bad one, as it is attended by much risk. He considers cleanliness in these cases of vital importance, and referred to a case in which he recently opened a previously closed wound and found glass and other substances imbedded. Excellent results followed the complete cleansing of this wound.

Dr. S. J. Mixter of Boston believed in the employment of extensive flaps in these operations, instead of running the risk of having to enlarge the incision afterward. He considered the trephin the most used instrument for opening the skull, and recommended that it should never be over three-quarters of an inch in diameter. He thought it might be well, when dividing the operation into two stages, to place between the skull and the skin a piece of celluloid to prevent adhesion. He advised pressure as the best means of controlling hemorrhage, and considered that an important question to be decided was the amount of pressure the brain can stand, he believing that it is sometime doubtful in fatal cases whether death is due to hemorrhage or to compression. Again, in cases of hernia of the brain, the question of the amount of pressure to be employed is important. He strongly recommended that a skilled pathologist should be present where an exploration of the brain is to be made to determine the presence of a tumor so that small fragments removed may be immediately examined and their nature determined. He thought that the question of closing the wound or leaving it open is still unsettled.

Dr. Christian Fenger of Chicago read a paper, entitled

URETERECTOMY.

He treated the subject under three headings: First, when the ureter is removed simultaneously with the kidney; second, when, after nephrectomy, the removal of the ureter of the same side becomes necessary; and third, when the entire ureter is removed alone. He also referred to a partial operation when only a portion of the ureter is taken away. He divided the operation into four kinds: First, transperitoneal; second, extraperitoneal; third, sacral; and fourth, transvaginal. He stated that ureterectomy has been performed for tuberculosis, suppuration in the dilated ureter, hydrops of the ureter, and for non-infected dilated ureter. He said that primary total ureterectomy was performed by Kelly, in 1896; primary partial ureterectomy by Tuffier, in 1891, by Kelly, in 1893, and by Postnikow, in 1892. Secondary total ureterectomy was performed by Reynier, in 1892, and secondary partial ureterectomy by Poncet, in 1894. He concluded his paper by giving a number of statistics of the various operations.

Dr. A. T. Cabot of Boston considered the ureter as being very accessible extraperitoneally by the Isarel incision. In removing a portion of the ureter he thought the question of the advisability of removing the last few inches must be settled at the time of the operation. He saw no especial advantage in transplanting the end of the ureter into the vagina, and thought the discharge from a lumbar fistula quite as endurable as a discharge from the vagina. He did not think the operation of ureterectomy is called for, except when extensive suppuration or whe tuberculosis exists. He advised cutting off the ureter a low as possible when tuberculosis exists, and stated tha the remainder could be removed at a subsequent operatio if necessary.

Dr. M. H. Richardson of Boston showed some colored pictures of a case of extirpated ureter.

A CASE OF FEUGER'S PYELOPLASTY FOR INTERMITTENT HYDRONEPHROSIS

was reported by Dr. Maurice H. Richardson of Boston.

A woman of twenty-nine presented a tumor of varying size in the region of the gall-bladder. The tumor could be felt only when there was pain and tenderness in the side. It was supposed to be a distended gall-bladder, and was exposed March 17, 1896. It proved to be an enlarged renal pelvis. With the subsidence of the tumor there was an increase in the amount of urine. After recovery from the exploration the patient had a recurrence of the distress and pain, with reappearance of the tumor. On October 22, 1896 the speaker did the operation upon the kidney, described and performed by Feuger. The operation may have differed in some details, but the principle was Feuger's, as described in the *Annals of Surgery*. The pelvis of the right kidney was enormously enlarged. The ureter was inserted obliquely into the dilated pelvis. The distended pelvis pressed upon the spur sufficiently to obstruct the urinary flow. After free exposure of the parts by extensive lateral abdominal incision, the outer wall of the ureter and the contiguous inner surface of the pelvis were incised as described by Feuger. This longitudinal incision was converted into a transverse one by means of fine silk, as in the Heincke-Miculicz pyeloplastic operation. The exit of urine could then take place through a funnel-shaped opening. The patient made a perfect recovery. She was exhibited in April, 1897, at the Clinical Society of the Manhattan General Hospital. There had been no recurrence of the symptoms; no tumor could be felt.

Dr. Richardson also reported a case of "Chronic Intestinal Obstruction from Incomplete Volvulus of the Sigmoid Flexure."

HABITUAL DISLOCATION OF THE SHOULDER-JOINT

was the title of a paper by Drs. Herbert L. Burrell and R. W. Lovett of Boston.

The authors said that the term "habitual dislocation" should be restricted to cases where secondary dislocations occur from insufficient cause. Such cases show an atrophy of certain muscles. These are the scapula muscles, the latissimus dorsi, the triceps, the deltoid, and the coracobrachialis. There is no reaction of degeneration n these muscles. The fluoroscope shows that the X-ray penetrates the affected side more slowly than the other, and it can be seen that the head of the humerus on the affected side is further from the acromion. Pathologic evidence shows that there may be abnormality of the head f the humerus, rupture, and displacement of tendons and ntra-articular fracture. Laxity of the joint capsule is almost universally noted.

The prognosis is that continued dislocations, increasing n frequency, will result if no treatment is undertaken.

The treatment may be (1) by apparatus (which is condemned), (2) by massage, (3) by massage and prolonged xation, (4) by operation.

(*a*) Excision has been done in the past, but is mutilating, and has been superseded to a great extent by a simpler operation. (*b*) An anterior incision exposing the joint should be made, and after exploration of the joint, an elliptical piece of the joint capsule should be excised, and the capsule sewed up.

Two cases successfully operated on by this method by Dr. Burrell were reported.

Many other papers were read by title.

AMERICAN NEUROLOGICAL ASSOCIATION.

Twenty-third Annual Meeting, Held at Washington, D. C., May 4, 5, and 6, 1897.

First Day—May 4th.

Dr. M. Allen Starr of New York delivered the presidential address on

THE TRANSMISSION OF SENSORY IMPULSES THROUGH THE SPINAL CORD.

He thought that the conclusions derived from physiologic experiments upon the lower animals were open to grave criticism, first, because of the fact that the majority of such experiments performed years ago were carried out without antiseptic precautions, and were attended by secondary septic inflammations of the cord and its meninges, which invalidated the conclusions drawn from them; and, secondly, because of the great variation in the anatomic structure of the cords of the lower animals and of man.

It is no longer possible to speak of the columns of the cord as being exclusively ascending or descending in the direction of their fiber. Recent investigations by Hoche showed the existence of many association fibers of limited extent in the direct cerebellar columns and in the columns of Gowers, and therefore it seemed evident that every column of the cord contained fibers which passed in both directions.

Is it not evident, therefore, in the transmission of sensation through the spinal cord, cerebral axis and brain that we have to consider the tracts as different in their structure from those conveying motor impulses, and as consisting of a series of short neurons closely connected but with very numerous and widespread connections? Is it not probable that the result of this arrangement is to secure a diffusion of single sensations to various reflex, vasomotor, trophic, and automatic mechanisms as well as to the organ of conscious perception? And is it not also evident that this view of sensory diffusion explains the apparent inconsistency, at present prevailing between the clinical symptoms observed in Brown-Séquard paralysis, and the pathologic degenerations occurring in that disease?

Dr. Morton Prince of Boston reported three cases of "primary idiopathic hydrocephalus" in adults with autopsies, besides two others which terminated in recovery. The first case followed trauma and simulated latent abscess with secondary meningitis of the base. Trephining was done with negative result. At the autopsy the venticles were found dilated to three times their normal size, the convolutions flattened, and the sulci almost obliterated. The speaker said that there is an acute and a chronic form of the condition. The acute simulates the purulent form of meningitis, but differs from it in its course and the variability of the symptoms. The chronic simulates and is usually mistaken for cerebral tumor. The affection is common but not usually recognized.

AUDITORY APHASIA

was the title of a paper by DR. HOWELL T. PERSHING of Denver.

He said that auditory aphasia is the sum total of speech defects due to a lesion of the auditory center for words; it is a more precise term than sensory aphasia, and more comprehensive than word-deafness. The reader reported, as typical of auditory aphasia, a case in which the symptoms were word-deafness, verbal amnesia, jargon paraphasia, paralexia, loss of comprehension of print, and agraphia, with retention of ability to copy Roman letters into script, and with no visual defects.

DR. PHILIP ZENNER of Cincinnati referred to a case with frequent attacks of word-deafness and spasm of the right side of the tongue and face. At the autopsy a tumor was found in the lower part of the Rolandic fissure, resting upon the first temporal convolution.

DR. G. L. WALTON of Boston read a paper, entitled

SUBARACHNOID SEROUS EXUDATION PRODUCTIVE OF PRESSURE-SYMPTOMS AFTER HEAD INJURIES.

The author arrived at the following conclusions: (1) A severe blow may result in local bruising and congestion with subarachnoid serous exudation. (2) The fluid may be imprisoned and cause focal paralysis. (3) The process is not compensatory, and is allied to the serous meningitis of Quincki. (4) The lesion is self-limiting. (5) Diagnosis from hemorrhage is difficult; atypical course. Absence of steady increase of symptoms, and persistence of sensitiveness point toward serous exudation. (6) Immediate operation is not necessarily indicated in focal paralysis, though perhaps always justifiable. (7) This condition is specially to be borne in mind before operating on children and young adults.

DR. B. SACHS of New York said the theory was not new. After head injuries, three possibilities were to be considered —hemorrhage, local edema, and purulent meningitis. The view of Dr. Walton was natural and plausible, and he agreed with him as to differential diagnosis. He would not operate on the skull too soon, not until after the lapse of forty-eight hours or several days.

DR. J. J. PUTNAM of Boston had seen several cases in which such a diagnosis could be borne out, but there was shifting of symptoms, which was important.

DR. C. A. HERTER of New York believed that local effusion could give rise to these symptoms, and spoke of a case of extreme general edema of the arachnoid following syphilis.

DR. JOSEPH COLLINS of New York related the case of a man, fifty years of age, who fell and struck his head in the left parietal region. This was followed by shock, stupor, and paralysis of the right upper extremity. At the autopsy there was some localized serous exudation, which was evidently of inflammatory origin.

DR. J. J. PUTNAM had seen venous hemorrhage into the pia, which was accompanied by hemiplagia.

The PRESIDENT thought that the question of localized edema should be one of fact and not of theory. He had seen three cases operated upon in which apparent inflammatory edema was found. He had also observed a case in which there was a very large amount of edema involving the entire hemisphere around a very small tumor.

ANESTHESIA IN DISEASES OF THE SPINAL CORD.

This paper was read by DR. PHILIP COOMBES KNAPP of Boston. He referred to the researches of Ross, Thorburn, Starr, and others. In syringomyelia the distribution of the anesthesia is more apt to follow another type, as in cerebral disease, where the boundary of the anesthesia is at right angles to the axis of the limb. Two cases were reported and many others cited proving this distribution. In other cases, however, as shown by by Lachr, the sensory disturbances are of the spinal type. Brissaud endeavored to explain this difference by referring the cases with anesthesia of the spinal type to root lesions, and those with anesthesia of the cerebral type to lesions of the central gray matter of the cord; and Chipault, accepting that hypothesis, found that in the paraplegia of spinal caries both types occur, which he thought a valuable distinction between lesions of the roots and lesions involving the cord itself.

DR. B. SACHS referred to cases of spinal origin, which, however, do not seem to be of spinal type, but which he had good reason to believe presented a syphilitic affection of the cervical region of the cord. This type closely resembled syringomyelia. He did not like the term "cerebral anesthesia," but preferred "regional anesthesia."

The PRESIDENT said that it is practically impossible to lay down an accurate diagram of the anesthesias from various regions of the cord. Individual variations must be considered and admitted. Irregularity in distribution is characteristic of spinal anesthesia.

DR. FRANK R. FRY of St. Louis reported a case of

SPINAL LEPTOMENINGITIS.

A bacteriologic examination showed the infection to be purely purulent. The scource of infection was a slight but rather chronic furunculosis on the back of the neck—the patient was a male house servant 27 years of age. The site of primary infection was the lumbar or lower dorsal region. The clinical history was that of an ascending paralysis with certain interesting features of temperature, etc. There was no cerebral involvement.

DR. HUGH T. PATRICK of Chicago reported

A CASE OF SYRINGOMYELIA.

A man of forty-four years began to be weak in the legs ten years ago, which weakness gradually increased until he walked with difficulty. A year ago the hands also began to be affected. Examination showed spastic paraplegia with weakness of the grasp and slight atrophy of the small hand muscles. The sensory symptoms were most interesting. There was a band of anesthesia about the trunk and extending on to the inner surface of the arms; an area of analgesia covered this and extended beyond it about four inches on the trunk and two inches on the arms. This distribution of sensory blunting is exactly the same as that which has been described by Laehr and the author as occurring in tabes, except that in the latter disease the band of analgesia is much narrower than that of anesthesia.

SECOND DAY—MAY 5TH.

ENCEPHALITIS WITH CHANGES IN THE PIA.

Dr. Alfred Wiener of New York read a paper on this subject and reported the case of a child three years of age, who, after meeting with an accident suffered from an attack of acute (non-suppurative) meningo-encephalitis. The child recovered after six months of illness. It reremained perfectly well, and after an interval of three years, just subsequent to an attendance of three months at school, had a second attack which proved fatal. The autopsy and microscopic examination showed an involvement of the pia as well as the brain and the characteristic picture of acute non-suppurative hemorrhagic encephalitis.

LITTLE'S DISEASE. SHALL WE RETAIN THE NAME?

This was the title of a paper read by **Dr. B. Sachs** of New York. He said that the use of the term "Little's disease" has led to great confusion. German and French authors have criticised English and American writers for not recognizing the disease as a distinct clinical entity. The name has not been adopted by the latter for the simple reason that Little's disease cannot be considered as anything more than a mere etiologic group comprising those cases of early infantile spastic palsies which are due to difficulties during labor resulting in asphyxia neonatorem. It cannot even comprise all spastic palsies that are in evidence from the time of birth, for many of them are not due to asphyxia, but to developmental defects, more particularly of the cortical or corticospinal division of the pyramidal tract. Some authors would make a distinction between general rigidity and cerebral diplegias and would call the cases of the former, Little's disease, but he is of the opinion that there is no rigidity without paralysis, and the difference is simply one of degree and not of kind. The division which the reader made into prenatal and birth palsies which has been endorsed by Freud should be continued, and the name Little's disease should be dismissed since it represents no distinct clinical group, and since a number of different morbid conditions are responsible for the infantile spastic palsies, or the cases of general rigidity appearing at the time of birth or shortly thereafter.

Dr. Frederick Peterson of New York differed from Dr. Sachs, as he had found that the greater the extent of the paralysis, the more the mental defect and epilepsy. At times he had found extensive paralysis without mental defect or epilepsy. He referred to 130 cases as having been reported, in which there were 30 with hemorrhage into the spinal canal.

Dr. J. W. Putnam of Buffalo said that cases varied in the symptoms according to their etiology. He spoke of two children in one family in whom there was extensive paralysis. One had marked mental defect and the other very little. Both pregnancies were attended with prolonged periods of vomiting.

THE NATURE AND TREATMENT OF SPASMODIC TORTICOLLIS.

Dr. G. L. Walton of Boston read this paper. He considered spasmodic torticollis as an affection of the cortical centers for rotation of the head. The pathology is not settled. The fact that it is sometimes easily inhibited does not establish a mental origin. Gross organic lesion is not present. Long-continued habit may merge into spasm, as seen in certain occupations. Eye-strain sometimes plays a part, through causing faulty position (oblique astigmatism, muscular insufficiencies). In one case it followed the wearing of a glass which increased instead of relieving an oblique astigmatism. The course of the disease is progressive. The principal muscles affected are the sternomastoid, splenius capitis, complexus, trachelomastoid, and the inferior oblique. The commonest form implicates the sternomastoid of one side and the posterior rotators of the other; less frequently the spasm is limited to the sternomastoid, occasionally to the posterior rotators of both sides (retrocollis), and rarely to the sternomastoid and posterior rotators of the same side. Treatment other than operative is ineffectual in well-established cases. Simple nerve-stretching is unavailing. The only operations to be considered are resection of nerves and section of muscles. Operations are generally too limited rather than too extensive. In most cases it will be necessary to resect the spinal accessory and the first three posterior branches of the cervical nerves. It will generally be wise to cut, also, the affected muscles. Muscle section alone has given good results (Kocher), but there is no reason to abandon nerve resection.

Absolute cure cannot be expected in over half the cases, improvement in a greater proportion, and failure in a certain proportion.

Dr. W. M. Leszynsky of New York, after briefly referring to his successful use of increasing doses of atropin injected into the spasmodic muscles, mentioned the case of a lady thirty-five years of age, who had been under constant observation for the last eighteen months. The clonic spasm had previously existed for six months, and involved the sternomastoid, trapezius, and complexus. The sternomastoid was hypertrophied to about four times its natural size. Atropin treatment could not be carried out, owing to idiosyncrasy. Conium and gelsemium failed. After prolonged rest and tonic treatment, together with local massage, passive movements, and educational gymnastics faithfully carried out, the clonic spasm was absolutely cured, having been absent for nearly ten months. This has, however, been replaced by a mild form of tonic spasm, which is remittent. A peculiar feature in the case was the high specific gravity of the urine, which was due to urates. Whenever the gravity rose to 1030 to 1034, the spasm increased, seemingly indicating an autotoxic irritative element in the case. He believed that if these cases were treated early by the foregoing method, very little would be left for the surgeon.

THIRD DAY—MAY 6TH.

AN UNCOMMON NASAL PARAESTHETIC NEUROSIS.

This was the title of a paper read by DR. SAMUEL AYRES of Pittsburg, who reported the case of a lady twenty-three years of age, recently married and of a neurotic temperament. The nasal disturbance began eight years ago, and was characterized by periodic flushings over the end of the nose. The attacks have increased in frequency and now consist in a sense of burning in the integument of the end of the nose, or over the entire cartilaginous portion. At the same time, there is general restlessness and considerable mental depression. No cause could be discovered. Various remedies had been used, such as local applications and the internal administration of bromids, cannabis indica, ergotin, etc., with only temporary benefit.

STEPS TOWARD INSANITY.

DR. SMITH BAKER of Utica read this paper, and said that the biologic doctrine that structure determines function is as applicable to the neuron as to other basal elements. Applied to insanity, psychiatry properly becomes an important branch of it. The primary presupposition of every instance of true insanity is that it is based upon arrest of development and a nurture too faulty to correct it. The step which initiates the degenerative tendency is unphysiologic marriage, and the perversive tensions and reactions which grow out of them. Another step is where two healthy people vitiate themselves by over-stress or nutritional perversions during the child-bearing period. With the individual, defective homing plays a most prominent part in fixating degenerative tendencies. Frequently the ordinary educational course, the universal leaning on proxies, and various kinds of stimulants, are but ways of confirming all that are degenerative. Diseases and accidents are important because of the emotional stress involved. Arrest of development at puberty is serious always. The immediate causation of the structural change seems to come through exhaustion and auto-intoxication. This must interfere with the characteristic activity of the neurons, which activity seems to be on the point of discovery as an ameboid movement of the cells or their processes. Dissociation, confusion, systematization may thus come to be founded in actual structural defect, itself the result, primarily, of emotional stress in ancestry.

A number of other papers were read by title.

The following were elected to membership: Dr. Wm. G. Spiller of Philadelphia, Dr. H. M. Thomas of Baltimore, and Dr. Wm. Hirsch of New York.

Dr. E. C. Seguin of New York was elected an honorary member.

The following officers were elected for the ensuing year: President, Dr. G. M. Hammond of New York; Vice-presidents, Dr. Philip Zenner of Cincinnati and Dr. J. J. Putnam of Boston; Secretary and Treasurer, Dr. F. X. Dercum of Philadelphia; Councils, Dr. H. T. Patrick of Chicago and Dr. Chas. K. Mills of Philadelphia.

AMERICAN ORTHOPEDIC ASSOCIATION.

Eleventh Annual Meeting, Held at Washington, D. C., May 4, 5, and 6, 1897.

FIRST DAY—MAY 4TH.

THE President, DR. SAMUEL KETCH of New York, opened the proceedings by delivering an address on

THE WORK AND INFLUENCE OF THE AMERICAN ORTHOPEDIC ASSOCIATION.

He said that just ten years ago the American Orthopedic Association was born—the youngest offspring of surgery. During these ten years its members have presented 323 papers, covering every part of orthopedic surgery. Thus, 35 papers had been on hip-joint disease, 19 on knee-joint disease, 49 on Pott's disease, 20 on lateral curvature of the spine, 6 on torticollis, 14 on congenital dislocation of the hip, 43 on clubfoot, and 79 on spastic paraplegia. This should, in itself, be conclusive proof of the good scientific work that has been done, and also a refutation of the charge that orthopedic surgery is a specialty having very narrow limits. The influence that the Association has exerted was, perhaps, best shown by the fact that up to ten years ago but few of the medical schools made any attempt to teach orthopedic surgery, and only three had a systematic course. To-day, orthopedic surgery is as much a recognized branch as are the other surgical specialties. It has passed forever out of the hands of the instrument-makers, quacks, and bone-setters. Probably the day is not far distant when there will be a journal devoted exclusively to this specialty. There is every indication that the Röntgen ray will prove peculiarly useful in this branch of surgery, and that it will clear up many points now shrouded in obscurity. The address closed with memorial sketches of recently deceased members, including one of the venerable Dr. Henry G. Davis, "The father of American orthopedic surgery," and the originator of extension in the treatment of joint diseases.

DR. HARRY M. SHERMAN of San Francisco read a paper on

ERASION OF THE KNEE-JOINT WITH CONSERVATION OF THE EPIPHYSEAL CARTILAGE.

Epiphyseal ossification, the speaker said, takes place on the diaphyseal side of the cartilage. If all the diseased tissue can be removed without interfering with the cartilage, it is reasonable to suppose that a certain amount of the developmental energy of that cartilage may be conserved. The paper was based chiefly on an experience with three cases. Two of the patients presented themselves with marked flexion at the knee, with sinuses opening in front, and with the head of the tibia dislocated backward. Total arthrectomy and epiphyseotomy were performed in each case. The epiphyseal cartilages were preserved. Healing was uneventful, and each patient left the hospital with the limb straight and apparently solid. But in each case flexion occurred while the child was still under observation, and in spite of solid plaster-of-Paris splints. In one case, as shown in the radiographs presented, there had been a certain amount of growth at the knee since the operation. The radiograph also showed that the flexion was due to the development of more bone in the anterior than in the posterior cartilage. The third case had been seen in a very early stage of the disease, and at first had done very well with a Thomas walking splint, except that an area of tenderness had persisted over the inner tibial tuberosity. The tissues over this portion were slightly boggy and condensed. After about two years, the case had been operated upon, the joint being removed, with the exception of the epiphyseal cartilages. The epiphyseal cartilages sloughed away with the exception of a circumferential band. This annular band had been sufficient to maintain the growth of the limb, and was shown by the fact that the amount of shortening had not altered. The general result had been most satisfactory, the functions of the limb being practically perfect. The radiograph showed that the cavity after the operation had been filled by a bone of rather lighter structure than the other bone. Dr. Sherman said that according to Mr. Cheyne it is important to locate and remove a tuberculous focus at an early stage, as this is often the means of cutting short the disease. By exploratory puncture with a needle, carried out with proper judgment, one can readily distinguish between tuberculous bone and sound bone, even in a young child.

Dr. Charles L. Scudder of Boston said that the flexion referred to did not seem to him an undesirable complication; a slight amount of flexion—8° or 10°—was more comfortable to the patient than when the knee was absolutely straight.

Dr. R. W. Lovett of Boston said that his experience with arthrectomy had been very discouraging, but his results with excision, even when done late, and in bad cases, had been extraordinary. While he was of the opinion that our progress in the management of hip disease would be chiefly in the direction of earlier excision in selected cases, yet his personal experience with the conservative treatment of early cases of hip disease had been quite satisfactory, and he was rather opposed to operative treatment in cases of knee-joint disease.

The President said that all surgeons had noted after excision that flexion was prone to occur, sometimes to a degree almost equal to the original deformity. Personally, he had found the conservative treatment of knee-joint disease in children favorable.

Dr. Sherman, in closing the discussion, referred to the question of focal operations at an early stage. He said that Mr. Cheyne went further than Mr. Barker and Mr. Wright, in that he advocated operating upon a lesion as soon as it could be definitely located by the swelling and tenderness. In children, Dr. Sherman thought, it is difficult to locate such a focus by tenderness, but the thickening of the tissues might lead one to suspect the presence of such a focus. Mr. Cheyne's suggestion might be applicable to all joints except the hip. The latter should be excluded, owing to its deep situation and the absolute inability of the operator to know whether or not he has removed all diseased tissue. As we know the ordinary locations of the early foci of disease, we can usually do an exploratory operation with a small trephine.

CASES OF TRAUMATIC SPONDYLITIS.

Dr. Arthur J. Gillette of St. Paul reported some cases of this kind. In the first one, the patient had slipped slightly on the sidewalk, following which there was paraplegia. After this had existed for five months, Dr. Gillette had first seen him, and had found a slight prominence in the upper dorsal region. This was associated with some rigidity and pain. The temperature range was quite typical of tuberculosis. Extension did not give relief as usual. The *post-mortem* examination showed the vertebral column, from the upper dorsal vertebræ to the sacrum, to be soft and spongy. The vertebræ throughout the column could be easily crushed with the fingers. The crest of the ilium, the ribs and the sternum were in the same condition. There was extensive tubercular disease of the lung, and enlargement of the liver and spleen.

The second case was that of a young farmer, of perfect development. He had severely sprained his back a few months before coming under observation. There was no immediate involvement of the spinal cord, but when first seen by the speaker, he was unable to walk, and there were exaggerated knee reflexes and marked ankle clonus. Any sudden jar caused pain in the back and legs. There was a slight prominence in the lower dorsal spine, and the muscles were rigid along the spinal column. While partially suspended for the application of a jacket, the patient had a severe attack of syncope. The case then developed the symptoms of basilar meningitis, and later on those of pleuritic effusion. Examination of the spinal column, *post-mortem*, was all that was allowed. The spinal cord was intact, and the membranes softened. In the upper dorsal region was a sinus passing into the left pleural cavity. This cavity contained apparently the same kind of fluid as the vertebral canal. Both the anterior and posterior segments of the vertebræ were carious.

The third case was in a robust young woodman, who sprained his back, and then developed symptoms and signs apparently indicative of vertebral caries. There were no symptoms of spinal-cord involvement. After a considerable time the patient died, and the *post-mortem* showed marked degeneration of the kidneys, a fatty liver, and a pulpy, dark red spleen weighing three pounds and four ounces. The was no evidence of tuberculosis in the lungs or spinal column. The spongy portion of several of the vertebræ had been reduced to a dark, pulpy mass.

Dr. R. W. Lovett presented a case of what he supposed to be

SPONDYLOLISTHESIS.

The patient was a youth of eighteen years, seen last September. He was of good physique, and enjoyed good health previously. In April, 1896, a wagon weighing 2600 pounds had passed over his pelvis. There had been no discharge of blood from the urethra or rectum after the accident, and after remaining in bed for a week or two without medical treatment, he began going around on crutches. When first seen by the speaker he walked in a bent attitude, leaning to the right. Movement in all directions was painful. The knee reflexes and the aspect of the case was that of a severe case of lumbar disease with abscess. The shape of the hips, however, was almost like that of congenital dislocation of the hips, except that the trochanters were on Nelaton's line. They seemed, nevertheless, unduly prominent. The lumbar spine appeared to project forward abnormally, while the sacrum was in normal position. A plaster jacket was applied under suspension, and it gave relief. In February, 1897, he was so much better that a laced jacket was substituted. A few days age, the man was discharged from treatment as all symptoms had disappeared. The deformity of the lumbar spine persisted, but it was apparently less marked than before. No motions were painful. The patient was no longer conscious of any disability.

DR. LOVETT said that the literature of spondylolisthesis was quite meagre. According to Neugebauer there are about ninety cases on record. It is probably due to a congenital deformity; or a defect of development, owing to atrophy produced by pressure.

THE PRESIDENT referred to the case of a young woman who had had a well-marked protrusion of the dorsal spine, with complete paraplegia of the lower extremities, and, for a time, of the arms. The girl had come to him originally as a case of round shoulders. The paraplegia developed about six months after treatment had been begun with an anteroposterior apparatus. After having been on a water-bed for two years, she died of exhaustion. The *post-mortem* examination was made by Dr. T. Halsted Myers, and no lesion of any kind was found in the vertebræ. The pathologist who examined the spinal cord never reported his findings. No organic lesions were found, and yet those who had seen the case during life felt convinced that it was neither a case of hysteria nor of malingering.

DR. E. G. BRACKETT of Boston presented a paper on

THE TREATMENT OF TORTICOLLIS.

He said that surgeons are pretty well agreed, (1) that the contracted structures lying superficial to the deep layer of fascia must be overcome; (2) that the deeper structures—the muscles, ligaments of the spine, and all the parts involved in holding the head—must be further stretched; and (3), that we must correct the "habit" of holding the head in an abnormal position. Habit was hardly the word to be used, but owing to a readaptation of the muscles, the head would be held in an abnormal position unless systematic effort was made to overcome it. The structural changes in the ligaments, muscles, etc., should be overcome by stretching or by massage. When the head was put up in over-correction, it was continually stretched, but, in *selected* cases, one could depend upon the intermittent traction resulting from active massage and exercises. A roll should be placed under the neck of the patient, who should lie with the head turned to the opposite side in such a way as to cause overcorrection of the deformity. In that position deep massage should be practised on the contracted structures, and on the trapezius of the opposite side. The next step was to make, up to the point of tolerance, forcible manipulations —depressing the head, etc. In the next place, the head being held as nearly in the correct position as possible, the patient should be required to do heavy work with dumb-bells, the muscles being made to work in their long arc instead of the short one.

In connection with this subject of the treatment of torticollis, Dr. Brackett said he desired to allude to an accident or complication which he had not seen described before. In the case of the older patient, described in the cases appended to his paper, this accident had occurred: The patient had taken the ether very well. On attempting to correct the position of the head, his color became peculiar, and the respirations suddenly became shallow. These symptoms disappeared on releasing the head, but the same alarming symptoms recurred on returning the head to the corrected position. On this account it became necessary to use only a moderate correction at the time of the operation. Three days later, on attempting to correct the position, the boy developed the same symptoms, and fainted. This was repeated at the next attempt at correction. Even at the present time, if the head were corrected beyond a certain point, there would be a partial return of these symptoms. The only explanation that had suggested itself to him was that the vagus nerve had also become short along the line of the vessels, and had been thus put on the stretch when correction had been carried beyond a certain point.

DR. LEROY W. HUBBARD of New York said that he had recently treated a case of congenital torticollis in a girl of twenty-eight years. In this case the right shoulder had been elevated two inches, the right sternocleidomastoid muscle markedly shortened, and the whole right side of the face considerably atrophied, giving to the face a very peculiar expression. On January 5, 1897, he had operated by the open incision, dividing the sternomastoid in the middle, and also the trapezius and all contracted tissues. The parts were thoroughly stretched under ether, and the head put up in plaster of Paris in an overcorrected position. After about ten days, the wound having healed, the plaster was removed, and further correction was made before reapplying the plaster of Paris. Subsequently, a spinal apparatus with a Taylor chinpiece was substituted for the plaster. This was worn for about two months, and each day the patient was subjected to manipulations similar to those described in the paper. At the present time she held the head in good position, and could move it easily in all directions. She had not worn an apparatus for about two months. There was still some elevation of the right clavicle, and also some lateral curvature of the cervical spine, which had been very marked before the operation. The stretching and massage are very important in these cases of persistent torticollis.

DR. SHAFFER thought that certain cases of torticollis could be relieved by systematic massage and intermittent traction. The great difficulty is to get the proper points for extension and counter-extension.

In one case that he had seen, instead of a unilateral contraction, both sternomastoid muscles had been contracted, producing a forward position of the head not unlike the position assumed in Pott's disease. In this case there must have been a double lesion of the nerve and muscle.

(To be continued.)

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ORIGINAL ARTICLES.

THE TUBERCULIN TEST IN INCIPIENT AND SUSPECTED PULMONARY TUBERCULOSIS.

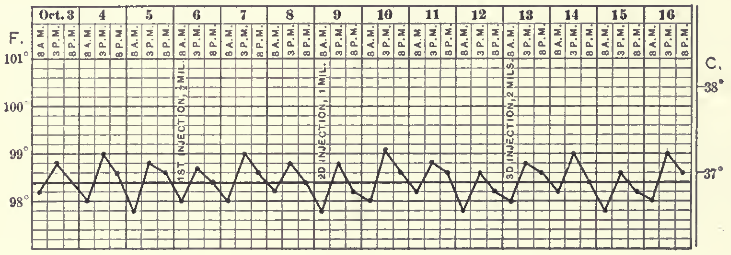
BY E. L. TRUDEAU, M.D.,
OF SARANAC LAKE, N. Y.

THE importance of making an early diagnosis in cases of tuberculosis cannot be too strongly emphasized. While studies in the autopsy-room have shown how often incipient tuberculosis is healed in man without its presence having even been suspected, clinical observation teaches daily how powerless we are to deal with the disease in its advanced stages, and how a latent pulmonary tuberculosis may be transformed into a hopeless and rapidly fatal disease when the unrecognized tuberculous process has gone on to ulceration, and when secondary infection has supervened.

The diagnosis of incipient and latent pulmonary tuberculosis, though often surrounded by many difficulties, can generally be made by a careful consideration of the history of the case, the rational symptoms, and the physical signs collectively, aided by a microscopic examination of any expectoration obtainable from the patient. Often at this stage of the disease, however, no expectoration is obtainable, or the bacillus has not yet appeared in it, and a most thorough examination of the chest and study of the symptoms fails to afford sufficient evidence to enable the examiner to reach a positive conclusion. He is therefore obliged to wait for the well-known symptoms to appear, and waiting means to jeopardize the patient's best chances of recovery. The application of the tuberculin test to such cases will often throw much needed light upon them, enabling the physician to reach a positive conclusion, and will give the patient all the chances of recovery that lie in the detection of the disease at such an early stage, before extensive lesions have developed, or secondary infection has occurred.

Besides its value in detecting latent tuberculosis, the tuberculin test may be found, in future, to have a wide range of usefulness, not only to the physician, but to the surgeon as well, in the differentiation of many morbid processes which simulate tuberculosis, and the nature of which cannot be positively ascertained. The differentiation of an inflammatory bronchitis of chronic type from pulmonary phthisis, of tuberculous pleuritis from the other forms of the affection, of an unresolved pneumonic process from a cheesy pneumonia, of simple inflammatory pyelitis and cystitis from the tuberculous variety of these diseases, and of a gonorrheal or rheumatic from a tuberculous synovitis, is often very difficult, and much light as to the exact nature of the process under observation may be expected by a careful application of the tuberculin test to such cases. In view of the demonstrated accuracy of this test when applied to cattle and to other animals artificially inoculated in the course of laboratory research, where its correctness can be controlled by autopsy, it is remarkable that a method which has proved itself so generally reliable in detecting the disease in animals, and which offered such possibilities as a diagnostic agent when applied to man, should have been so almost universally neglected and generally condemned on scant evidence as utterly worthless and dangerous. This, no doubt, has been due, in a great measure, to the bitter disappointment which followed the acclamation of tuberculin as an infallible specific, and to the unquestionable evil effects of its indiscriminate and injudicious application to the treatment of human tuberculosis. To those, however, who continued quietly the study of tuberculin, it soon became apparent that while its beneficial influence as a therapeutic agent could be exercised only within certain very restricted limits, its undoubted diagnostic value steadily became more and more evident in the light of slowly accumulating experience in its use. So general in this country has been the condemnation of the use of tuberculin for any purpose, when applied to the human being, that but little evidence in regard to its diagnostic value, except as applied to cattle, has thus far been presented.

Among European observers the opinions are somewhat divided, but tend to show that while it is not infallible, it cannot any longer be ignored as an aid to diagnosis in obscure or latent cases. Von Jaksch (*Verhand. der Congress f. Innere Med.*, 1891), after using it in twenty-eight cases, concludes that tuberculin has a high diagnostic value. Guttsdat has collected figures from German clinics which show that a well-defined reaction occurred in eight per cent. of apparently healthy individuals, in ninety-five per cent. of cases known to be tuberculous, and in twenty-seven per cent. of cases suspected of tuberculosis. Maragliano (*Berlin Klin. Woch.*, No. 19-20, 1896) obtained a reaction in nine per cent. of apparently sound individuals, and in twenty-three per cent. of patients suspected of tuberculosis, but without any well-defined symptoms. Maragliano carried his tests to doses as high as ten to twenty-five milligrams in cases which failed to react to smaller doses. Grasset and Vedel (*Semaine Médicale*, Feb. 26, 1896) obtained slight but nevertheless well-defined reaction in ten out of thirteen patients suffering from various maladies, the tuberculous nature of which was suspected, but could not be affirmed, while in three cases of undoubted pulmonary tuberculosis with bacilli in the expectoration no appreciable reaction occurred. Grasset and Vedel used minute doses, not exceeding .0002 to .0005. De Renzi quotes Pieper, Rietzkow, Senn, and Verneuil, who reached the conclusion that Koch's injections are not a sure method of diagnosis in tuberculosis of the internal organs, and also Von Jaksch, who thinks Koch's method has a high diagnostic value. De Renzi himself says, "Nevertheless, it must be admitted that tuberculin in a majority of cases can be used as a diagnostic agent." R. Koch (*Deutsche Med. Woch.*, No. 14, Vol. I., April, 1897), in his recent publication on a "New Tuberculin," states that Dr. Nietner will soon publish the results of the application of the tuberculin test to one thousand cases.



Case i.

Temperature chart of patient who received three injections of tuberculin without resulting reaction.

Sarcoma, carcinoma, syphilis, and actinomycosis have been said to react to tuberculin, but in the instances quoted the presence of tuberculosis in conjunction with the above-mentioned diseases was usually not excluded. Before condemning the test as at fault when reaction occurs in apparently healthy individuals, it should be borne in mind that autopsies made on persons dying of other diseases show some unsuspected tuberculous focus to exist in from thirty to forty per cent. of those examined.

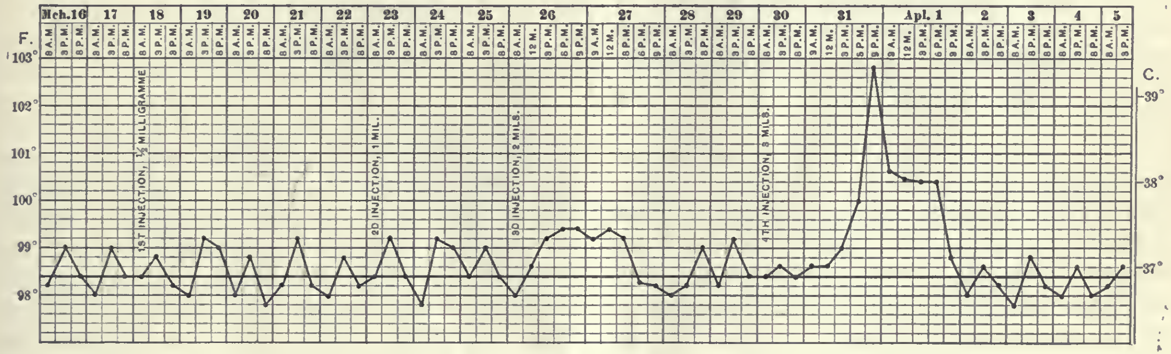
My own experience with the tuberculin test during the past five years has been principally in the direction of its occasional use to determine the presence or absence of suspected pulmonary tuberculosis when diagnosis could not be made by ordinary means, and has been limited to fourteen cases, seven of which were positive and seven negative. The highest dose given was three milligrams. In the positive cases reaction was obtained in six with a dose of two milligrams or less. In one, however, an injection of three milligrams was necessary before a well-marked and typical reaction took place. The temperature in six ranged from 100.2° to 102.5° F. at the height of the reaction, and the symptoms were of moderate intensity and soon abated. In one case only the temperature reached 104.2° F. Symptoms indicating reaction came on in six cases within twelve hours, and in one they were not well defined until twenty-two hours after the injection. In six of the cases the fever had entirely abated within twenty-eight hours; in one it lasted forty-eight hours. In all of these after the temperature returned to normal no unusual rise took place, and the general condition of the patients was within a week apparently the same as before the tests were applied. What slight physical signs were present seemed accentuated for a time within twenty-four hours after the injection in all but two, in both of which the previous examination of the chest had proved entirely negative. In these no abnormal sounds were developed by the injections. The tests were made in one case in 1893, in two in 1894, in two in 1895, and in two in 1897. One of these patients has been lost sight of and reported as dead; the others have shown at some time or other clinical evidence of pulmonary tuberculosis.

In the seven negative cases no appreciable rise of temperature occurred. Two of the patients have passed from under observation, but the others have all remained well thus far. The test was applied in two cases in 1893, in one in 1894, in two in 1895, in two in 1897.

The history of two cases, one negative, the other positive, is briefly given, with temperature charts, as being instructive. The rational symptoms in both cases were obscure and very similar. A physical examination of the chest proved inconclusive, and in both cases no positive diagnosis as to the presence or abscence of tuberculosis could be made before the test was applied. The chart in Case 2 shows a typical tuberculin reaction occurring at the fourth injection of three milligrams, which in this case was rendered necessary, the smaller doses having given but equivocal evidence of the presence of a latent tuberculous process.

Case I.—Miss A., aged twenty-eight years. Family history good. Has lost ten pounds during the last three months. Is somewhat anemic, tires very easily, and has had some cough with but little expectoration for the past six weeks. Appetite poor, and digestion at times troublesome. Has no fever, but has occasionally perspired a little at night. Expectoration repeatedly examined shows no bacilli. Physical examination of chest inconclusive. The vesicular murmur is very faint, and expiration somewhat prolonged at right apex. This patient was sent to the mountains as a case of suspected pulmonary tuberculosis. The test was made in 1893, and the three injections given produced absolutely no rise of temperature. The cough disappeared within two weeks, and the patient was allowed to return to New York, where she is now living in excellent health.

Case II.—Mr. B., aged nineteen years. Father died of phthisis; two brothers and a sister are well. A year ago began to notice that he tired easily and lost some weight. Has never been up to his usual standard of health since, though he has had no marked symptoms. Has no cough except at times when he catches cold; has no expectoration except at such times. Expectoration examined then showed no bacilli. Temperature when he gets tired or has a cold reaches 99.5° to 100° F., otherwise generally normal. Had typhoid fever in 1890. Lungs examined several times by specialists, but nothing found. Came to the mountains seven months ago, and has gained nearly ten pounds. At present is up to his normal weight. Still tires easily, but is desirous of entering college if no serious disease exists. This test was made in March, 1897. The first two injections produced no effect whatever. The third, of two milligrams, was followed by a little discomfort, and it will be noticed that the temperature, which stood at 99.6° F. twelve hours after the test, did not fall as usual the next morning, but remained above 99 until 6.30 P. M. As this seemed suspicious, a third injection of three milligrams was given four days later. A typical reaction ensued. At 6 P. M. he was a little chilly, had some pain in the limbs, and went to bed of his own accord. At 10 P. M. his temperature stood at 102.8° F. It fell during the night to 100.6°, but did not return to normal until 6 P. M. on the day following the injection. Within two days he said he felt as well as ever; no rise of temperature has taken place since, and he seems in his usual health. A careful examination of the chest during the reaction was negative.



Case 2.

Temperature chart showing reaction after four injections of tuberculin had been given.

In the absence of any well-defined rules founded upon the experience of others at the time I began to use the test, the method I adopted has been a purely arbitrary one and I make no claim for its being the best or the most reliable, although as far as my own personal experience goes I have as yet seen no objection to it or any reason to modify it.

The range of the patient's temperature is ascertained by taking it at 8 A. M., 3 P. M. and 8 P. M. for three or four days before making the test. The first injection should not exceed five milligrams, and if any fever is habitually present should be even less, and is best given early in the morning or late at night as the typical reaction usually begins, in my experience, within six or twelve hours. Such a small dose, while it will often be sufficient to produce the looked-for rise of temperature, has under my observation never produced unpleasant or violent symptoms. An interval of two or three days should be allowed between each of the two or three subsequent injections it may be necessary to give, as reaction in very rare cases may be delayed for twenty-four or even thirty-six hours. On the third day a second dose of one milligram is given, and if no effect is produced, a third of two milligrams three days later. In the great majority of cases of latent tuberculosis an appreciable reaction will be produced by the time a dose of two milligrams has been reached. If no effect has been caused by the tests applied as above I have usually gone no further, and concluded that no tuberculous process was present, or at least not to a degree which need be taken into account in advising the patient, or which would warrant insisting on a radical change in his surroundings and mode of life. If some slight symptoms, however, have been produced by a dose of two milligrams, it may be necessary to give a fourth injection of three milligrams in order to reach a positive conclusion. Nevertheless, it should be borne in mind that in a few cases the exhibition of even larger doses may cause reaction and indicate the existence of some slight latent tuberculous lesion, and the test should not, when applied within the moderate doses described, be considered absolutely infallible.

No evidence in connection with the tuberculin test as applied to man and animals has been forthcoming thus far from those who have made use of it which would tend to sustain the general impression that this method is necessarily dangerous and tends invariably to aggravate the disease, and my own experience has developed nothing which would seem to confirm this impression. It is evident that the size of the doses given has much to do with the limitations of this method for usefulness and the correctness of the conclusions reached by its application. The tuberculin used is also a matter of some importance in determining the dosage, as different samples vary considerably in their efficiency. The minute amounts adopted by Grasset and Vedel, *i.e.*, from .0002 to .0005, while they have the advantage of absolute safety, may lead into error, as they are insufficient, on the evidence of these observers themselves, to cause reaction in cases proven to be tuberculous by the presence of the bacillus in the expectoration. If, on the other hand, the test be pushed to the injection of such large amounts as 10 milligrams or more, as advocated by Maragliano, such doses are by no means free from the objection of occasionally causing unpleasant and sometimes dangerous symptoms; and even if the amount given be not carried to the dose of 10 milligrams, which is known to produce fever in healthy subjects, it is likely that, on account of individual susceptibility or the presence of some other morbid process in the body, reaction will be found to occur with the larger doses when no tuberculous process exists. The adoption of an initial dose so small as to guard against the absolute possibility of producing violent reactionary symptoms, and the graded increase of the subsequent doses within such quantities as are known never to produce reaction in healthy individuals, would seem to afford the best protection against unpleasant results and misleading evidence.

It is greatly to be desired, however, that more light should be thrown by additional studies on these points, and that the best method to be employed in making the test and its limitations be more accurately defined by evidence derived from a more extended and varied experience in its use.

NOTE.—Since the above was written, and while it was in the publishers' hands, a paper on the Diagnostic and Therapeutic Value of Tuberculin was read by Dr. James T. Whittaker before the Association of American Physicians, and although I was not present at the meeting, and have as yet seen only abstracts of his communication, it is evident that Dr. Whittaker's extended experience with tuberculin has been in the main similar to my own. The doses he has made use of are larger than those I have employed, but his experience as to the value of the test when intelligently applied, and its freedom from injurious effects, has been the same as mine.

THE PROGNOSIS AND TREATMENT OF ACUTE GENERAL PERITONITIS.[1]

BY ROBERT ABBÉ, M.D.,
OF NEW YORK.

TWENTY years ago, the dread of peritonitis after operations within the abdominal cavity where previous inflammation did not exist, was still the bugbear of surgery. It has gradually occupied a lessening position of seriousness in the calculations of the operator, until to-day the surgeon, who is properly cognizant of the powers of the peritoneum to aid him when respectfully treated, completes his work (no matter what immediate soiling has occurred, be it extravasation of bile, urine, feces, or pus), with slight apprehension that post-operative peritonitis will occur. The once-dreaded invasion of the peritoneal cavity has become a matter of safe conduct when the operator is the invader. Nevertheless, this same cavity has become a battleground of great interest in the surgical field to-day, when not the surgeon, but germ-laden matter, is the invader, and precedes the surgeon by many hours. Here the race becomes unequal. A death-dealing blow has been dealt to the human body in one of its most vital parts, a blow from which it is possible to rally, under some circumstances, by intrinsic powers of resistance, but which, under most conditions, is followed by an encounter, the outcome of which will often depend on extrinsic aid from the physician and surgeon.

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[1] A contribution to the discussion upon "Peritonitis" at the the Fourth Triennial Congress of American Physicians and Surgeons, Washington, D. C., May 4, 5, and 6, 1897.

It is to the study of this most important and narrowing field that our attention is turned.

That the peritoneal cavity is not equally impregnable in all its parts is a well-established fact. Not that the same susceptibility does not exist in all anatomically similar portions of its surface, but from varying contour, or proximity to actively moving viscera, it transpires that the greater part of those invasions which originate in the pelvis, or in the fossæ outside the colon, or in a less measure in the area anterior to the stomach and liver and above the colon, become localized within a few hours, and are under the control of Nature's reparative processes in the confines of quickly built up lymph walls; while a discharge of offending secretions into the more central part among the small intestines becomes a grave menace, from causes the principal of which seems to be the difficulty encountered in throwing up barriers in the presence of quick-moving intestinal coils, which rapidly distribute the infection.

Hence, we will see that the location of the invasion, independent of the quantity and virulence of the material spread about, has much to do with determining the gravity of the case and the need of action. The scholarly treatment of the subject of general peritonitis, in all its minor and major phases, by Treves and other writers, and the graphic delineation by Dr. Senn of the varieties and classification, impress upon our minds the value of thorough understanding of the nature of peritonitis and the methods adopted by Nature to save life. They prepare us to accept the dictum that all peritoneal invasions by infectious processes, of which we shall speak, are essentially fraught with the greatest peril. Although general peritonitis may originate in any portion of the cavity, we must exclude from our thoughts in this discussion all limited forms, no matter how grave their concomitant symptoms. We know that an intra-abdominal abscess or slight infection may be accompanied by so grave symptoms that, to the clinician, it may seem to be a case of general peritonitis, and a surgeon may even wrongly report operation on general peritonitis, because he has opened an enormous abdominal abscess which had crowded the uninflamed intestines into the upper part of the abdomen.

The grave form of acute general peritonitis which we are to consider is one which is caused almost universally by the rupture of some one of the hollow viscera (stomach, intestines, appendix, or bladder), and for the practical surgeon need not be classified on any but a clinical basis. We must accept the universal bacterial origin of peritonitis, and regard the victim as poisoned by the septicemic infection. Apart from all other considerations we must say that acute general peritonitis shall include only those cases in which the infection is not confined by any lymph barriers. The stage at which it is seen will determine the area of the peritoneum invaded. The affection is the same whether it include half or all of the entire peritoneum—for who can say when the last few inches are affected? The case which we operate on to-day and find universal had spread to only half the abdomen yesterday and six hours earlier to one-quarter of its area. The surgeon has to form an estimate of each particular case at the time of operation by the naked-eye appearances and thus classify it as to gravity. If he has been fortunate enough to inspect it by early operation he will find most various appearances all illustrating an early stage of a disease inevitably advancing to a fatal issue. The one essential feature that allows a case to be classed as acute general peritonitis is that there are no boundary limits. Given a turbid, semi-purulent or purulent effusion about inflamed small intestines arising from perforated stomach or gangrenous appendix, with no effort of Nature to wall it in, and the fatal end of the case is not far off unless arrested by the surgeon. Septic infection has already occurred and Nature has failed to wall it in.

The only subclassification of this form of peritonitis is into the early and late stage. Both are equally grave if left to Nature.

Opinion has been growing skeptical as to the value of operation in this form of peritonitis in any stage. Speaking of general diffused non-tuberculous peritonitis, Treves says: "I am doubtful if a single human life has been saved by surgical interference in a genuine case of peritoneal toxemia." Richardson says: "In a large number of cases of general peritonitis, verified by bacteriologic examination, the result with hardly an exception has been fatal in my hands under any method of treatment." Weir says that he had never been able to save a patient nor had he seen one saved. Von Winivarter, after a large experience, writes: "In not a single case where the exudate had a fecal odor have I succeeded in saving my patients, all have succumbed to the septic intoxication. . . . We possess no means of checking a peritonitis of septic character." Regnier says: "Laparotomy and lavage are unavailing for the cure of a true general peritonitis. The various cases we hear of are cases of large encysted purulent collections." Delorme says: "I have operated on many cases of general peritonitis and I have lost all my patients."

Facing this pessimistic opinion, which is echoed from many sources, it seems evident that the optimism of those who report from thirty to sixty per cent. of cures, is born of a misunderstanding of the variety of the disease discussed. Let us then make no mistake in appreciating the character of the disease.

As I have already stated the only warrant for classing cases under this head is the presence of reasonably extensive involvement of some part of the small intestine from foul contamination, which is absolutely not limited by any boundary adhesions. As far as septicemia goes, they are all septic, and under the above conditions practically guarantee an ultimately fatal issue under expectant treatment. Demonstration of the presence of noxious bacteria in the exudation has been so constantly shown that it may be admitted to be universal. Acute general peritonitis is an *a priori* argument of their existence.

The variety of the bacterial flora corresponds with that found within the intestines. Elaborate research has already demonstrated the streptococcus and bacillus coli commune as most uniformly present. Therefore, we are prepared to study the prognosis of *unlimited peritonitis* from an operative point of view, regarding it, if fairly widely developed, as being on the high road to a fatal issue.

The effort made by the system of the patient to protect and rid itself of the parasitic assault, is a complicated and beautiful one. The power of the peritoneum to rapidly remove large quantities of fluid, introduced experimentally in animals, as studied by Wegner and others, demonstrates that from three to eight per cent. of the animal's weight of fluid can be taken up in an hour—equivalent to the entire weight in one day. Murcatello demonstrated, also (*Virchow's Archives*, 1895), that the current of absorption is toward the diaphragm, which fact is of practical import. Carmine particles suspended in fluid are quickly carried through the intercellular openings in the peritoneum covering the diaphragm into lymph spaces beneath, where direct communication is had with the mediastinal glands. Here the parasites can be found arrested in five to seven-minutes' time if the animal is held head downward.

Before the visceral peritoneum begins absorption into the lymphatic system of the mesentery that which lines the diaphragm has given exit to bacterial infection and leucocytes, which are speedily taken into the blood current and sent to the large abdominal organs—the liver, spleen, and kidneys.

Experimental research shows that when a small amount of infectious culture of intestinal bacteria is injected (a cloudy emulsion of 5 or 10 c.c.) it can be disposed of without fatal effect. A small quanity produces diarrhea; more, a local peritonitis; still more, a fatal fibropurulent peritonitis—and a larger dose, acute fatal sepsis, without peritonitis. Examination of the survivors show no streptococci in the peritoneum 5½ hours after injection of small quantities. The experiments of Barron and others, however, show that a very minute quantity of fluid from an inflamed part (such as fluid from puerperal peritonitis) produces much graver symptoms than a larger quantity of a culture from the same germ. The destruction of bacteria by phagocytosis, and the unexplained bactericidal action of blood-serum, are coincident methods called into action in the emergency and need no description here. When the injection is severe they are inadequate and every organ teems with bacteria soon after pronounced septicemic symptoms appear.

With such recognition of the power of the peritoneum to rid itself of small toxic doses, we turn to the demands made upon it by disease and accident. Taking the experience of hospital surgery as representing an average we find that acute general peritonitis results in the majority of cases from infection starting from the appendix. Second to that, perforating gastric ulcers, intestinal traumatisms, ruptured pelvic abscesses. Ruptured urinary and gall-bladders occupy a relatively smaller place.

With the nature of the invading medium, it is evident, the virulence of the attack must vary. A discharge of stomach secretion into the peritoneum seems not to be so quickly toxic as a minute quantity of active poison pent up in an already inflamed appendix, yet by its eroding action on the endothelium paves the way for absorption soon after. So also with normal urine or intestinal contents not in a state of inflammatory ferment at the time of invasion. In such cases septicemic symptoms supervene some hours after the accident. Perforating gastric ulcer, if it has time to leak slowly into the peritoneum, will almost surely be controlled by adhesions, and the alert operator may save general invasion by incising the epigastric abscess.

Most perforations, however, occur after a meal, and general peritonitis is set up simultaneously from the stomach to the pelvis. The degree of inflammation found will be in exact ratio to the lapse of time before operation.

Recent statistics show that, up to five years since, no operative case for perforating gastric or duodenal ulcer had recovered. Weir has recently collected 97 operations, with 22 recoveries, and to his statistics I am able to add a summary of twenty reported later, three of these being my own. In these additional 20 general peritoneal extravasation occurred in 18, and of this number 12 recovered and 6 died. Out of the 12 recoveries operation was performed within ten hours in 7 and after twenty-four hours in 5, showing the value of prompt action. Of the six fatal cases in all but one operation had been delayed until after the first day. In two fatal cases the peritonitis was practically cured, but the patients succumbed to septic pneumonia as late as the seventeenth and twentieth days. Weir says, in reviewing his statistics: "More than half of all the patients operated on in the first twelve hours recovered, the mortality being 39 per cent.; while of those operated upon from twelve to twenty-four hours after perforation, 70 per cent. died, and of those who came to operation after the first day, 87 per cent. succumbed." In conclusion, he says: "The happy result of operation is dependent more upon its early performance than upon any other factor." My own feeling is most hopeful that future contributions to this subject will show that the earlier we can operate on these cases, the more surely will we be able to combat the disastrous accident.

In gunshot or stab or penetrating wounds of the abdomen there is a universal consensus of opinion that operation at the earliest possible moment is the only justifiable attitude. The surgeon can never be absolutely positive some organ is not injured or that there exists concealed extravasation until he has seen the invaded part. If it be a slight stab wound, or if shock is greater than will warrant anesthesia, it is incumbent on the surgeon to make an incision or an extension of the wound under cocain anesthesia, and if nothing be discovered he may then be justified, and only then, in awaiting symptoms. If he finds perforation or hemorrhage, a temporary arrest of the flow will be conservative until two or three hours have given the patient time to recover from shock. The statistics of gunshot wounds corroborate the value of promptness, as seen in every other phase of abdominal work. Of 39 cases operated on within twelve hours, 18 recovered, while of 22 after twelve hours, only 5 recovered. Likewise in rupture of the urinary bladder, which was uniformly a fatal accident until recently, the mortality has been reduced from 90 to 50 per cent. during fifteen years. Sieur's paper reports 34 cases and 14 recoveries. Schlanger notes 22 operations and 10 recoveries. The evidence is accumulating that early cleansing and draining will insure a prompt recovery, unless cystitis be previously present when the chance of grave peritonitis is enhanced. So also if the gall-bladder be inflamed at the time of injury, the bile is swarming with bacteria, notably the coli commune, which have worked back from the duodenum, and septic peritonitis is imminent unless quick and thorough precaution be taken. Normal bile, however, will be fairly well borne and disposed of by the uninflamed peritoneum.

The phase of acute general peritonitis from perforating typhoid ulcer has seemed to me to differ but little in its course and treatment from that following ulceration of other parts of the alimentary canal. The patient's lower vitality does not militate so greatly against recovery as one would imagine. The peritoneum is able to throw reparative lymph about a slow perforation, though usually it is overwhelmed by a sudden liquid extravasation. The beneficial results of interference are shown by the case of Van Hook, which, as yet, stands unequalled. He operated at two in the afternoon in a case where rupture occurred at five in the morning (nine hours before). Extravasation had taken place wide of the ulcer. The opening was sutured, the abdominal cavity thoroughly washed out, and the patient rescued from collapse, and saved. Excluding all doubtful cases, Finney finds 11 recoveries after 45 operations, showing a success in 26 per cent.—certainly a very admirable showing in the face of practically certain death. The evidence, as he shows, is clearly in favor of early operation. The most striking recoveries were among those operated upon twelve hours after the accident.

It is well recognized that in this trouble there is a marked signal symptom of the beginning perforation. The patient has "sharp continued abdominal pain coupled with nausea." As in gastric perforation the patient feels as I have had them express it either a "tearing pain" or as if something had given way. Hence, the attending physician has in most cases every reason to suspect the nature of the disaster, and little excuse for masking the symptom by morphin while waiting for peritonitis to set in before seeking surgical aid.

After the foregoing considerations we are now able more intelligently to consider the prognosis in that disastrous condition seemingly more common every day, *viz.*, acute general peritonitis of appendical origin. Granted that ninety per cent. or ninety-five per cent. of mild attacks of appendicitis pass over without grave results, there still falls to the lot of the surgeon that unhappy group of septic cases which are presented to him for cure by the too often delinquent practitioner after from two to five days of hopeless expectancy. Of this type, with non-limited inflammation, all are in various stages of septicemia, and the dullest observer must admit that, be it early or late, the patient is on the highway to more profound infection and inevitable death. The literature of the last two or three years teems with references to individual cases and opinions, showing confusion of classification and reporting oftentimes doubtful cases.

I have chosen therefore to ask you to consider a very few reported consecutive cases representative of this class.

Two years since McBurney chose a group of twenty-four cases distinctively of this type operated on by himself during the previous five years and gave brief details of each, sufficient to identify it as justly classified. He also regards general peritonitis as including those not only which are seemingly universal but such as involve half or a quarter of the intestinal surface and are spreading without barrier at the time of operation. Of his twenty-four cases he saved fourteen. One reads though that in some cases limiting barriers had been thrown up but had subsequently burst and scattered the pus far in advance among the coils of intestine. McCosh, also, in a paper recently read before the Surgical Society chose, among his hospital cases, eight during the past two years and forty-three during the previous seven, which he had submitted to radical operation. Of the forty-three in the earlier group thirty-seven died (86 per cent). Of the eight during the past two years two died. Of all the fifty-one cases thirty-nine died (or 76 per cent). He has carefully confined his choice to cases of distinctly generalized peritonitis.

In my own practice I have chosen with the same point in view thirty-three cases, all that I have operated on during the past five years from among several hundred laparotomies. I would also add ten well-observed cases ably reported by Lockwood (*L. Clin. Jour.*, April 1, 1896) and nineteen consecutive cases during two years by Koerte (*Berlin. Kl. Woch.*, Aug., 1892). It would be unnecessary to enlarge this list for present discussion, and we may fairly say that this group of 137 cases are representative, and would be duplicated in consecutive work by most operating surgeons. As already remarked it is only fair to the discussion to divide these into two groups, representing an early stage and a late stage as nearly as possible. A picture of the two types would be represented by what may be presumed to be the condition of the same patient operated on at the end of twelve hours or neglected until the third day.

From the milder class are excluded all those where clear serous effusion is found free, and from the second cases those where pus is scattered from an abscess at operation, or just prior to it, even though it be found smearing the intestine beyond confines.

In the first picture, the early stages, a day or two after a sharp onset of symptoms, operation will release turbid or semipurulent fluid, which will flow from between presenting coils of intestine before the appendix is reached, and will uniformly be found in considerable quantity in the lower pelvic pouch. When the operator has dried all presenting parts, he draws the dusky, inflamed intestines toward him, and finds no barriers of lymph adhesion; but as he sponges between the coils and advances into the center of the small intestine area, there is less and less appearance of inflammation. When the visible evidences are less, he thrusts sterile gauze pads still further into the interintestinal spaces, and later, on withdrawing them, finds them wet with clearer effusion than that already removed. He rests satisfied. The appendix in these cases may be either slightly perforated or gangrenous, free among the intestinal coils, or hanging loosely in the pelvis. It is bathed in foul-looking fluid, more turbid than appears elsewhere, and usually has a slimy, virulent-looking coating of non-adhesive exudation. If not thinned by gangrene of its coats, it is highly inflamed and hard.

If treated expectantly it will represent the second class in from one to three days, and on incision thin pus (usually offensive) will stream out of the operative wound—will be found floating the bowels out of the pelvis, and come equally from the opposite side of the abdomen, or in the median line above the navel. The intestines are thickened or even granular, and reddened lymph patches are loosely and irregularly adherent. It is no wonder that surgeons stand appalled before this class and are skeptical as to their ever being cured.

Taking the class mentioned as the most fair that I can find for study we have the following showing:

McBurney, 24 cases, 16 recoveries; McCosh, 50 cases, 12 recoveries; Abbe, 33 cases, 9 recoveries; Lockwood, 10 cases, 3 recoveries; Koerte, 19 cases, 6 recoveries. Total—137 cases; 46 recoveries. It is possible in many of these to divide them into the two classes previously mentioned.

In my own, of which I have clear records, I can assert that of the 33 cases, 6 were of the milder type but progressing rapidly when operated upon, and 27 were of the grave type. Of the mild type 5 were operated on early, and 1 on the fifth day—all recovered. Of the grave 11 were operated on within two days, 3 recovered, 8 died; 16 were operated on from two to five days after the attack—all died.

Of the reported cases of McBurney and McCosh it is not easy to thus classify many of them, but choosing 28 cases, in which the time of operation is indicated, there were 18 of the grave type, and 10 of the milder. Of 6 grave cases taken within 1½ days, 4 recovered, 2 died; of 8 grave cases taken within 2½ days, 4 recovered, 4 died; of 4 grave cases taken within 2½ days, all died. Of 10 cases of milder type, 3 cases taken within 1½ days, all recovered; two cases within 2½ days, all recovered; 5 cases after 2½ days, 1 died. Of 19 cases of Koerte, 16 operated within 4 days, 6 recoveries; 3 over 4 days, all died.

For a summary then we may say that choosing only those 16 which are certainly of the milder type, judging from personal knowledge or the records, only 1 died. Of the graver type, 64, where the time is noted, the 17 recoveries were all obtained inside of 2½ days. There is but one logical deduction from this review—and that corresponds with the same, drawn with regard to perforations of the stomach and intestines—namely, that the element of time is the one of greatest importance. The earlier the operation the greater the hope. Only 1 death occurred in 16 slighter forms of advancing general infection, and almost no case of the graver type recovered after 2½ days from the hour of attack, the earlier periods showing most recoveries.

There is one point I have discovered in the review, that, of numerous cases where recovery takes place, albumin or casts are not found in the urine. I ask careful consideration of this by future reporters because it would seem that where the kidneys are choked up by the bacteria of septicemia it is practically useless to operate.

If time permitted, I would gladly give some thought to the evidences which distinguish a true case of beginning dangerous peritonitis from the milder local troubles which often begin with seemingly the same violence.

Are there any entirely characteristic symptoms?

A study of the initial signs in cases which have come to operation and been proved has shown me that uniformity of symptoms is entirely wanting. A persistent diffused tenderness spreading to the opposite side of the abdomen is very grave. A board-like stiffness of both sides of the abdomen is suggestive. Tenderness at a point in the rectum as high as the finger can reach in the median line is a sure index of either an inflamed appendix hanging over the pelvic brim, or an acute peritonitis. A pulse that is rapid and quick, or "snappy," is almost a sure index of septic toxemia, and, if it persists more than twelve hours, calls for interference.

Vomiting will usually occur once with most mild attacks, but, if persistent, indicates mischief. The tongue may be clean and moist and the eye bright in one-third of the cases of grave peritonitis, even after two or three days.

The facies of abdominal inflammation is more often a late symptom.

Thoracic respiration is very often seen when spreading peritonitis prevails.

The temperature is frequently but little elevated during the first day or two, while the pulse may be showing great agitation.

These danger signals may serve to aid diagnosis before profound toxemia sets in; when the surgeon can do nothing.

Regarding treatment, substantial progress has been made in determining the lines of action.

There is but one opinion regarding the cleansing of the abdominal cavity when only the lower segment has as yet been invaded. The moment the surgeon sees septic fluid, he sponges it away before it can be scattered. He mops the presenting bowels with sponges in clamps, dripping wet with hot salt solution (ʒ iss to a quart), and dries them again before drawing other coils into the field of inspection. As soon as parts are found not much inflamed, he pushes a sterilized gauze tamponade, properly folded, among the bowels far away from the field of work. This has a tape sewed to it, to which a clamp is fixed and left outside the wound. One or two such tamponades may be thrust upward and across the abdomen before the pelvis is cleansed, to which much attention is *always* to be given. This being thoroughly mopped out, a light packing of mild iodoform gauze is to be placed in the pelvis, and a short way among intestinal coils elsewhere, especially if the gauze tamponades now removed prove to have come out wet, absorbing the thin effusion from a distance. The abdominal wound should never be closed in any septic case. It wastes time, confines infection, and prevents drainage.

In the grave cases, a long median incision, or two lateral ones, will always be needed. The lumbar drainage incision will only be necessary when the median cut is used.

The question of drainage has been thoroughly settled in favor of ample gauze packing as against rubber or glass tubes.

The lymph barrier quickly thrown out by the peritoneum wherever the gauze is in contact at once forms a boundary line, beyond which one process is going on, namely, absorption, destruction, and elimination of the marginal infection, already entrapped, while at the site of packing the current is reversed and everything is sucked into the gauze and removed.

When infection has been widespread there is but one alternative—irrigation. By flushing the inter-intestinal spaces systematically with hot salt water, as hot as the operator's hand can bear (which will be over 105°, usually), these effects are produced. The water cleanses and stimulates the patient amazingly. One sees the pulse respond at once and remain steady long after the operation, and the absorbing power of the washed endothelium is diminished. This has been shown by experiments of Kinscherf on animals where doses of strychnin or bichlorid of mercury left after irrigation were not absorbed, while the same put into the peritoneum of dogs not irrigated were fatal. Thus the toxin absorption is temporarily arrested, while the patient fights for time to discharge the burden already taken up.

In the large abdominal incisions in bad cases, it is wise to leave the wound widely open, the gauze will hold back the intestines, and abdominal straps and binder will support the abdominal walls.

If the intestines are distended with gas and fluid feces it is well to let them come out of the abdomen, receive them in hot towels in charge of an assistant, and prick one or two prominent places with a knife to evacuate gas and noxious excreta, which is washed away with a constant hot stream. Through one opening there should then be injected a syringe full of saturated solution of Epsom salts and the puncture closed. I have done this on three occasions during the past three years, but only in the very worst cases.

McCosh, however, advises in all bad cases to pass such a dose of salts through an aspirating needle into the bowel, and close the aperature with one suture, which I heartily endorse as a routine procedure. It cannot be vomited, it excites downward peristalsis, and as it aids to carry off impurities, it proves of the greatest value.

In regurgitation lavage of the stomach should be done before and after operation, and repeated as soon as regurgitation is renewed.

The rectal tube to relieve distention by gas is of inestimable value, and its use not infrequently marks the turning point in the disease by promoting downward peristalsis.

Some of the most brilliant recoveries I have had have been where the attending doctor has been ineffectually plying the patient with calomel or physic, which acted only after operation, or where a good dose of calomel taken after operation has rid the body of all noxious excretions on the second or third day.

The value of an ice coil, or light broad ice bags after a general peritonitis, cannot be overlooked. I have great faith in cold thus used to retard the inflammatory action and bacterial growth either before or after operation. Moreover, it is almost uniformly grateful to the patient.

I will not detail other restorative measures which must be plied on general principles. Strychnia 1-40 gr. every two hours is sometimes necessary, and in cases of severe pain when the patient is well out of ether, morphine, hypodermically, is rather helpful than otherwise.

In conclusion, I would say that close study of the bad cases of general peritonitis shows it to be one of the most absolutely fatal maladies with which we have to deal. It has also been demonstrated that logically and statistically the earlier the operation on the lines delineated the better the prognosis. It has been further shown that even in the bad form if operation be done and a masterly irrigation carried out there still remains a chance for life if the period elapsing be not more than two and one-half days. In cases where albumen and casts show in the urine it is proof enough that the system is already overwhelmed and the kidneys and other glands are choked and the operation hopeless.

The burden of responsibility then for fatal issues in so many cases lies not with the surgeon so much as with those who withhold from him the opportunity to render the prompt aid which we have shown is the only chance. The ideal success may be accomplished in the future not more by new methods than by new opportunities. The ideal operation may be the old method under ideal circumstances as to time.

NOTES ON THE ULTIMATE RESULTS OF THYROID FEEDING IN CRETINISM, WITH SPECIAL REFERENCE TO THE EARLY STIGMATA OF DEGENERATION.[1]

By H. H. VINKE, M.D.,
OF ST. CHARLES, MO.

CRETINISM is a condition of complete degeneracy dooming its victim for life to a degree of mental and physical development not much advanced beyond that of infancy. Metabolism appears to have come almost to a standstill in these cases. Careful scientific research has developed the fact that the immediate cause of this rare affection is an absence of thyroid secretion, resulting either from an entire absence of the thyroid body or from total disorganization of that gland. Thyroid feeding in these cases has been followed by a reanimation, so to speak, of the centers controlling normal metabolism, and by renewed physical and mental growth.

Improvement in the physical condition of these patients is first noted; they begin to grow rapidly, the face assumes a more intelligent expression, and there is an apparent return to a normal condition. Intellectual improvement is as constant as improvement in the physical condition, but not so rapid, which is quite natural when it is remembered that the mind of a cretin is not advanced beyond that of an infant. A complete return to a normal condition undoubtedly depends upon the length of time the disease has existed when treatment is undertaken. When early, a complete cure may reasonably be expected; when undertaken late, after the disease has persisted for years, during which period all growth is practically in abeyance, it is practically impossible to regain all that has been lost, although considerable improvement may confidently be looked for. Normal thyroid secretion is most important to the economy during its developmental period, but is indispensable at all times, for, after the complete ablation of the thyroid gland in the adult, cachexia strumipriva or surgical myxedema is known to ensue. We may, therefore, safely assume that in cretinism thyroid feeding must be continued throughout life.

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[1] Read before the Tri-State Medical Society at its annual meeting, held at St. Louis, Mo., April 6, 7, and 8, 1897.

Unless we hold that cretinism is an affection of different degrees, complete absence of thyroid secretion entails the gravest forms of the disease, the milder forms resulting when the thyroid gland continues to secrete some thyroid juice which is insufficient in quantity or changed in quality. In the latter case, the administration of healthy thyroid juice might in time excite normal functional activity of the thyroid gland. It is probable, however, that the human organism exhibits the classic symptoms of cretinism only when there is a complete annihilation of the thyroid secretion, and that in cases where there is simply a lack of sufficient secretion, merely a few evidences of degeneracy will be found.

The opinion has been advanced that when in time this earth ceases to be a suitable habitat for the species homo, the last state in the radical degeneracy will be a condition not unlike that of cretinism, but as yet cretinism is comparatively rare. Much more frequently, however, do we meet with marks of defective development or stigmata of physical and mental degeneracy. Prominent among the former are: A bulky head out of proportion to the body, persistence of the anterior fontanel beyond the second year, a meager growth of coarse and dry hair, late irruption of the teeth, goiterous degeneration of the thyroid gland, modification of the voice; dry, coarse, and loose skin, general obesity with characteristic softness of the hypertrophied adipose tissues, a prominent abdomen, rachitic deformities, such as curvatures of the long bones and of the spine, persistent low temperature, etc. Stigmata of mental degeneracy comprise lack of vivacity, torpor, sopor, and the different degrees of deficient intellectuality, of which an enfeebled mind is the mildest and idiocy the severest form. Such marks of degeneracy we would expect to find in children who are backward, whose growth is stunted, and who walk and talk later than normal children. In fact, unduly retarded physical and mental growth, even in the absence of the anomalies and deformities referred to, is suggestive of insufficient thyroidization. Assuming that all these marks of degeneracy depend upon defective metabolism, of which a lack or perversion of the thyroid secretion is a prominent factor, the field of applicability of thyroid feeding would be considerably widened, for, inasmuch as thyroid feeding is followed by such excellent results in cretinism, the conclusion that thyroid feeding would be equally successful in the earliest manifestations of degeneration might be drawn without undue temerity.

The importance, then, of recognizing the earliest stigmata of degeneration is obvious, for, by judicious treatment with thyroids we might not only expect to prevent ugly deformities, but also complete degeneracy. I wish to call attention here to the fact that we are indebted especially to Schiff, Horsley, and Murray for all we know of the functions of the thyroid. By careful experiments on lower animals these scientists were enabled to determine not only the function of the thyroid body, but also to point out the remedy for disturbed or annihilated function of that organ.

For the past six weeks I have been treating a child with thyroid extract in whom some of these marks of defective metabolism were apparent. Owing to the poor health of the mother, this little girl had to be fed from birth on boiled, sterilized, and condensed milk, different commercial foods, etc., and as a result of this feeding the little one saw few well days during the first two years of her existence. Gastrointestinal disturbances were constantly present, slight and unimportant at times, and again so severe as to require the attendance of a medical adviser, when new medicines and some new food would be prescribed. It is surprising indeed that a large number of physicians should take so little interest in such an important subject as infant-feeding, and that they should be willing that manufacturers of foods should solve for them such an important problem. At the time that the child was put upon thyroid treatment I found the head out of proportion to the body and much larger than that of her sister, who is two years older. Her hair was coarse and dry and looked not unlike that of a doll. The skin was coarse, loose, and flabby over the entire body, and usually moist, with an offensive sweat. Over the chest and abdomen there was a rash, probably the result of inflamed sweat-glands. Distinct depression over the lower ribs on both sides, immediately under both nipples, was evident. Myxedematous deposits were found on the dorsal surfaces of both feet. Though nearly three years old, she could not support her body on her feet, and her vocabulary was limited to a few words, and these could be understood only by her parents.

It has been determined that the dose of thyroid extract is from ½ a grain to 1 grain a day for children under two years, and from 1 to 3 grains daily beyond that age. As much as 6 grains daily has been given for a short time. One grain of the extract represents 10 grains of the fresh thyroid. This little patient has been taking 1 grain of the extract daily during the past six weeks without any ill effects.

Though there is no marked change in the different measurements of the head and body made at the beginning of the treatment, I am able to notice a distinct improvement in her physical and mental condition. The hair is assuming a natural gloss, the face has a more intelligent expression and is less bloated, she is brighter, and, when supported, she can stand on her feet for some time. The time is yet too short to enable me to arrive at positive conclusions, but I feel confident that thyroid feeding in this case will in time bring about a normal condition of affairs.

THE DELIRIUM OF CONVALESCENCE.

By LAMBERT OTT, M.D.,
OF PHILADELPHIA.

THIS condition, the delirium of convalescence, apparently paradoxical, is a truism and a rarity, and when encountered gives the physician no little annoyance because, being an unusual concomitant of the stage of improvement in disease, suggests the possibility of the development of an impending attack of insanity. The delirium of disease in its inception and height is a natural and expected association, but to have it continue when other symptoms have abated and the patient has emerged from a dangerous condition and is declared safely over his trouble, or to have a delirium set in for the first time when the patient has reached such a stage is often perplexing and at times suggests a suspicion of a concealed dyscrasia foreboding further mischief.

In some cases of delirium accompanying the stage of improvement of disease it is surprising how often one notices a striking resemblance of an attack to delirium tremens, which I believe it often is. One often finds that a patient has been in the habit of taking from three to five drinks of whisky daily for years, and when he is bedfast for a time, the stimulant having been withdrawn, he progresses favorably through the disease with no mental wandering, but as his condition begins to improve and everything points to an undoubted recovery, he unexpectedly talks discursively, has hallucinations, and gradually manifests all the rational symptoms of delirium tremens. The patient is not known as a drinking man, nor does the physician dare to mention the real nature of the attack, but with potent doses of chloral and bromids to induce sleep the mind becomes normal and he is soon about. Such an attack occurring in the decline of a disease, especially where delirium is to be feared by reason of it indicating metastasis or the extension of the disease to vital brain centers, is viewed with misgivings, and for a time surrounds the issue with an element of doubt.

The following is illustrative of the above facts:

K., aged fifty-eight years, had tonsillitis. The second day the condition of his throat was better and the fever subsided, when a redness and swelling appeared on the nose. The next day the redness spread to both cheeks and fever set in, the temperature not going higher than 103° F., and thereafter the symptoms ran the usual course of an ordinary attack of facial erysipelas. On the fifth day the fever subsided, the tongue became moist, and the pulse normal. The patient now presented every appearance of being well, when, on the sixth day, his mind wandered, he became sleepless, delusions multiplied, and on the seventh day his hallucinations were those ordinarily met with in *mania-a-potu*, though subdued in form. He had no headache, there was an entire absence of fever, the pulse was excited and rapid, there was no vomiting, the tongue was moist, and the urine normal. Chloral and bromids, in 10-grain doses, every hour until sleep was induced dissipated these symptoms, and he was soon convalescent. This condition simultaneously appearing with that of an erysipelatous redness on the head naturally caused no little alarm, and the patient's family felt that inflammation of the brain had set in, nor did I feel absolutely certain as to the cause of the phenomena, but in view of the negative signs I contended that there was no inflammation of the brain coverings, as the issue of the case proved. The delirium was not the wandering of meningitis but more like that met with in alcoholism.

In the apical pneumonia of children, aptly called cerebral pneumonia, there is usually an accompanying delirium of a low, persistent type, at no time violent or excitable, continuous throughout the course of the attack, and not dependant upon the severity of the disease, nor requiring a decidedly elevated temperature to produce it. The association of this form of pneumonia and passive delirium is nearly constant, and even after convalescence is established I have seen the mental wandering continue, always being attended by a rapid pulse and anemia. After a course of tonic treatment the patients have usually recovered.

I have seen delirium in the convalescent period of typhoid fever even in patients manifesting no mind disturbance during the height of the malady. In such patients we find a profound anemic state, and very likely if no vicious family predisposition is present, the faulty brain nutrition is contributive to the condition, the mind becoming normal, as the system regains a healthier tone. Typhoid fever is most productive of the delirium of convalescence, then comes pneumonia, and next severe attacks of scarlet fever. In scarlet fever of an anginose variety, when the convalescence is retarded by complications and sequelæ, such as rheumatism of the joints, serous-membrane inflammations and tubal nephritis, prolonging the disease and consequently impoverishing the blood and lowering the vitality, a low mental wandering is manifested even after all unfavorable systems are removed, and one notices a gradual subsidence of the hallucinations as the systemic condition improves. I have seen the same condition in severe cases of measles, when great prostration, glandular swelling, and anemia accompanied the improvement following the immediate attack. One is constrained to suspect some hidden complication, such as catarrhal pneumonia, in these cases, but in several instances in which delirium, or, I might say, a mental wandering, existed, I was unable to find any lung complication whatever. The patients all improved slowly under predigested nourishment, stimulants, absolute rest, and strychnin. The family history in this class of cases is negative, but a low order of mind usually exists, and it is therefore likely that a feeble-minded child in health is less able to withstand the perverse brain nutrition induced by severe and prolonged attacks of the continued and eruptive fevers, or by lung inflammation.

The delirium of convalescence is a transient delirium with lucid intervals, and has the peculiarity of not being persistent, nor is the patient beyond persuasion of the error of his delusion. His attention can be gained and retained with an effort, and the mind with some aid and guidance operates in normal channels, but left to itself the wandering is resumed.

There are several conditions present in these cases, such as a rapid and feeble pulse, anemia, great prostration, subnormal temperature, and a weakened peripheral circulation, as shown by the cold and pallid extremities. The slightest exertion, as assuming the erect posture, or drinking hastily, induces dyspnea. Occasionally vomiting is an attendant symptom, and this added to the previously described condition, is suggestive of tuberculous meningitis, but an absolute absence of headache enables one to exclude this possibility. It is not always easy to arrive at a definite conclusion but as the case progresses a diagnosis is readily made. One noteworthy fact is the great alarm of the family when it is patent to their minds that the ill one has safely passed through the attack of disease.

As to treatment, strychnin, three times daily, and, in children, a palatable red wine pushed to toleration, produces the most happy effect. Iron is indicated, but if the stomach does not received it kindly then I depend upon rest, stimulants, and nourishment, watching the secretions, and for the development of complications which are always insidious in their approach in these states of lowered vitality.

ACUTE SOFTENING OF THE PONS, RESEMBLING OPIUM POISONING.[1]

By THEODORE DILLER, M.D.,
OF PITTSBURG.

Symptoms resembling opium poisoning may result from softening of, or hemorrhage into, the pons. In a brief but very instructive paper published recently, Dana[2] has analyzed a large number of cases of hemorrhage into the pons, and called attention to the fact that acute lesions of this organ have, a number of times, been mistaken for opium poisoning, and he is able to cite several instances of this sort.

The symptoms which are alike in these two conditions are: coma or stupor, greatly contracted pupils, and a slow rate of respiration. Given the case of a patient exhibiting these symptoms and without a history, a diagnosis would be difficult or impossible; and of the two acute lesions of the pons, it would seem that the difficulty of differentiating from opium poisoning would be greater in the case of softening than in that of hemorrhage, for in the latter instance the sudden onset would very likely greatly aid in clearing up the diagnosis in any case with medico-legal bearings. Of these two lesions, softening is of much more frequent occurrence than hemorrhage, and it is rather surprising that the resemblance of its symptoms to those of opium poisoning has received such scant notice in text-books and current literature, the chief attention being directed to the rarer condition, hemorrhage. It is well known that acute lesions of the pons, produce different symptoms, depending upon the size and location of the lesions, and I do not wish to be understood as maintaining that the symptoms resulting from acute softening always produce symptoms resembling those of opium poisoning, but only that they may do so—how frequent it would be difficult to state. Aside from these medico-legal considerations, the case I wish to report is, I believe, of considerable interest purely from a clinical point of view. Its chief features, briefly, are as follows:

Mrs. B., aged sixty-six years, on the evening of March 7, 1896, was seized with severe cramps accompanied by vomiting. Dr. Thos. Kirk, who was called to see her, prescribed one-eighth of a grain each of morphin and calomel, to be taken every two hours. The patient continued this treatment for about twenty-four hours, taking during this time about one grain of morphin, when it was discontinued. On the evening of March 9th her husband was killed by a street car. She was at once informed of this fact, but she soon forgot it, and was retold of it several times during the evening, only to forget it again. Dr. Kirk then noted for the first time that her pupils were contracted. The next day she was somewhat stupid or lethargic. This condition grew upon her during the next twenty-four hours, at the end of which time she was in almost complete coma.

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[1] Read at the Twenty-third Annual Meeting of the American Neurological Association, Washington, D. C., May 4, 1897.

[2] *The Post-Graduate*, vol. xi, No. 7.

When I saw her on March 12th, with Dr. Kirk, she had been comatose for forty-eight hours, with slow, irregular respirations, greatly contracted pupils, and twitching of the muscles of the face. The coma, however, was not complete, for a painful stimulus caused withdrawal of either arm or leg, and an expression of pain on the face. The pupils were so contracted that they would ordinarily be described as "pin-point pupils," but more accurately, I think, as "pin-head pupils." A convergent squint was present. There was a good deal of twitching of the muscles about the mouth. The respirations were about seven or eight to the minute, and came in pairs of threes, with long intervals between each group. Her temperature, which on the 7th was 103° F., had come down until the 10th, when it was 100° F. It then slowly rose and was 101.5° F. on the 12th. She continued in the condition described until her death which occurred the next day. It was a source of much regret to both Dr. Kirk and myself that an autopsy was refused.

The morphin given during the attack of gastroenteritis, which was the beginning of the patient's illness, was most carefully administered, and there can be no doubt that the amount taken was as above stated, and that none was given after the first twenty-four hours. Mental confusion was noted about the time the morphin was discontinued. Stupor began twelve hours later and gradually grew deeper, but twenty-four hours elapsed before this stupor developed into actual coma, and the coma was never complete. These facts alone, had the case been a medico-legal one, would have sufficed to show that the symptoms were not due to morphin poisoning.

The points laid down by Dana which distinguish an apoplexy of the pons where there are contracted pupils, slow respirations, and coma from opium poisoning, were well illustrated in this case. According to this authority opium poisoning is characterized by a rise of temperature of from .5° to 1°, there is no twitching of the muscles, the respirations are slow but regular, and coma is complete, while in apoplexy of the pons there is a rise of temperature of from 3° to 4°, twitching of the face muscles is present, the respiration is irregular or Cheyne-Stokes in character, and coma is incomplete.

In the case reported, another symptom of considerable importance was present, *viz.*, an internal squint; and this, taken in connection with the other symptoms, strengthens the correctness of the diagnosis arrived at—acute lesion of the pons. The gradual onset of the cerebral symptoms of course indicated softening rather than hemorrhage. The early rise of temperature, due to gastro-enteritis, the subsequent fall, with abatement of the gastro-intestinal symptoms, followed by a rise during the first two days of coma, are interesting features. What to me seems a reasonable explanation of these facts is the following: A condition of the cerebral vessels favorable to the formation therein of a thrombus was present, and the fall of temperature was due to a subsidence of inflammation; but during this time a thrombus formed in the pons, favored by the altered condition of the blood, softening followed, and with it coma, and a second rise of temperature.

A CASE OF LEAD POISONING PRESENTING SOME UNUSUAL EYE SYMPTOMS.

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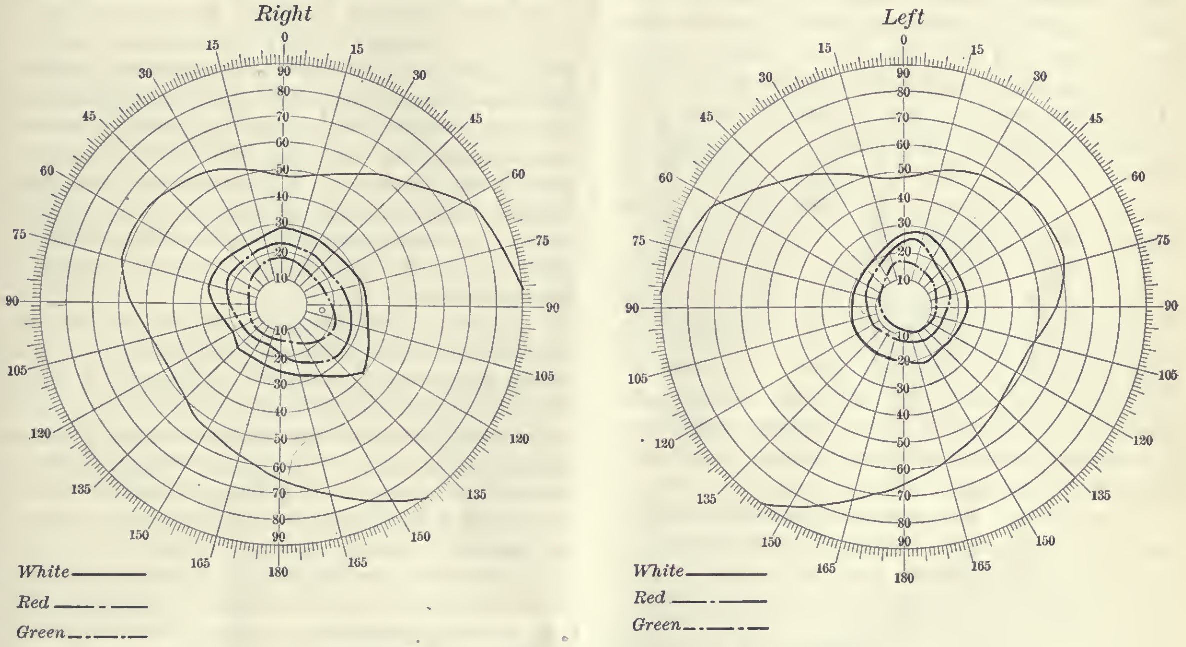
ALTHOUGH ocular symptoms, as a result of plumbic intoxication, have been recognized and studied for over two centuries attention has been chiefly directed to the visual defects arising from the fundus changes, especially inflammation or atrophy of the optic nerve. In recent years a transient amblyopia, not attended by any lesion visible to the eye and comparable to the temporary blindness of uremia or diabetes, has also been recognized and frequently reported. Various forms of retinitis, too, have been observed, and these are believed by Parisotti[1] to be due to a form of endovasculitis which he terms *endarteritis saturnina obliterans*.

Another class, possibly rarer than the foregoing, includes instances where the intoxication produces paralysis of one or more of the extrinsic ocular muscles. The following report is of such a case:

Jacob B., aged forty-nine, has steadily followed the occupation of painter for sixteen years, doing both inside and outside work during that time. He has enjoyed fair health and the only history of illness, apart from the attacks about to be described, is that of typhoid fever many years ago, followed by a large carbuncle in the lumbar region. He is married and has had five children, of whom one died at six months of age. There is not now any evidence of syphilis in his own person or that of his wife or children. He has had no injury to the head nor is he the subject of any lesion of the brain or cord. He has, however, had several attacks of what seemed to be true painter's colic. The first of these come on five years ago, and the last one six weeks ago. There has never been any weakness of the extensors of the hands, approaching the condition of "wrist drop," but he speaks of having noticed a slight tremor of the hands and a weakness of grasp. There is no definite history of transient attacks of defective vision. Three years ago, on rising one morning, he became dizzy and fell. He says he remained unconscious for half an hour, after which he felt a dull pain which extended over the whole head, lasted two-days, and then gradually disappeared. Since then he has had persistent double vision, and occasional attacks of vertigo. Three weeks after this last attack his left eye began to turn out, and the left lid has drooped so that the eye is almost closed.

His present condition is as follows: his left eye has vision $\frac{2}{5}$, not improved by glasses. With + 3 D. he reads words of Jæger 1. There is complete *ophthalmoplegia externa*, with the exception of the external rectus and possibly of the superior oblique. The paresis of the levator labii superioris is most marked when he is not fixing his eyes. The pupillary reflexes of both eyes are sluggish to light and accommodation. With the ophthalmoscope very few fundus changes are visible, but the outlines of the papilla are not clean cut, and it has a woolly appearance. There are a few patches of disturbed choroidal pigment scattered over the fundus. fitting hernial truss. The patient's urine and saliva are practically normal. In testing for lead the dihydric sulphid, potassic iodid, and potassic chromate reagents are employed.

To me the most interesting signs of plumbic intoxication in this case are the unilateral pareses, and the fact that the optic-nerve atrophy set in without any of the transient attacks of amblyopia which usually precede the permanent disease. The treatment has consisted of hot baths, small daily doses of magnesic sulphate and potassic iodid; of the latter one gram three times a day, gradually increasing it until nine grams *per diem* were administered. The patient has not been working for the past six weeks. Some improvement in the muscular signs has already resulted.


Right *Left*

Contraction of visual field as a result of chronic lead poisoning.

There is nothing abnormal about the right eye except the lazy pupillary reactions and slight fundus changes resembling those of the left eye. V=$\frac{2}{3}$, and Jæger 1 is easily read with + 3 D.

The visual field of each eye is decidedly contracted, the limitations being more marked in the left eye. (See Figs. 1 and 2.) The patient now presents none of the classic signs of plumbism, wrist drop, muscular tremors, blue lines along the gums, etc, but, on the other hand, he has not worked at his trade for some time past.

Dr. Sanger Brown reports that, with the exception of the oculomotor paresis and the optic-nerve defects, there is nothing abnormal about the patient's nervous apparatus. There is absence of patellar-tendon reflex on the left side, but this, Dr. Brown thinks, may be due to his wearing a powerful and ill-

The above is the only instance of saturnism affecting the third nerve that I have observed among nearly 13,000 cases of ocular disease that have come under my immediate care, but I think it is quite possible that I have attributed to syphilis and other causes, examples of ocular paralysis that were really due to lead poisoning. When one thinks of the numerous sources of lead intoxication to which the public is exposed (from food and drink stored in leaden vessels) and of the many crafts in which lead is continually used, examples of oculomuscular defects due to plumbism must be far from rare. However that may be, the reported cases are not numerous. Galezowski[2] reports several of these and thinks they constitute a large percentage of saturnine ocular intoxications, and that they are particularly unsatisfactory to treat if all the branches of the third nerve are implicated. Incomplete pareses, on the other hand, are more amenable to remedial measures. Landesberg[3] reports a case of bilateral paresis of the external rectus, while another patient observed by him had complete paralysis of all branches of the oculomotor nerve. Von Schröder[4] also reports a case of typical neuroretinitis with bilateral abducens paralysis. Wadsworth[5] gives a very instructive account of a boy, aged 9, in whose urine lead was found for many months, although the source of the poison was never ascertained. He had marked optic neuritis and paralysis of several ocular muscles, and eventually became blind from optic atrophy.

It is not difficult to understand why the eye muscles should occasionally suffer in chronic lead poisoning. One of the most characteristic signs of the disease is an affection of the voluntary muscles in other parts of the body, and there is no reason why the motor apparatus of the eyeball should escape. The case reported by Parisotti furnished, by means of the ophthalmoscope, an opportunity of studying the minute changes as they actually progressed in the capillary system of the fundus oculi, while the comparatively frequent occurrence, in chronic plumbism, of retrobulbar neuritis leads us to believe, with Oeller[6] and others, that whenever secondary alterations set in the process *begins* as a fatty metamorphosis (obliterating peri- or endarteritis). As I have previously pointed out,[7] the nervous, muscular, and other tissues supplied by these nutrient vessels may be converted into fat, fibrous tissue or hyalin substance as a secondary metamorphosis.

The ocular lesions in chronic plumbism are, then, essentially peripheral in character, and are quite distinct from, although they may be coincident with, other eye alterations which sometimes occur as a result of renal and cerebral complications arising in the course of a long-standing intoxication.

Bibliography,

[1] Parisotti and Molotti, "Un Cas d'Atrophie des deux Papilles par Intoxication Saturnine;" *Recueil d'Ophtalmologie*, 1895, p. 520.

[2] "Des Amblyopies et des Amauroses Toxiques," p. 125.

[3] "Affections of the Eye Consequent upon Lead Poisoning," *Philadelphia Medical Bulletin*, 1880, II. 108.

[4] "Beitrag zur Kasuistik und Literatur der Amblyopia Saturnina," *Graefe's Archiv. für Oph.*, 31, p. 229.

[5] "Double Optic Neuritis and Ophthalmoplegia from Lead Poisoning," etc., *Boston Med. and Surg. Journal*, Oct., 1885.

[6] "Ueber hyaline Gefässdegeneration als Ursache einer Amblyopia Saturnina," *Virchow's Archiv.*, 1881, Vol. 86, p. 329.

[7] "The Toxic Amplyopias, their Symptoms, Varieties, Pathology, and Treatment," vii, p. 25.

A Valuable Bequest.—By the death of the Duc d'Aumale, May 7th, the Institute of France comes into possession of the Chateau of Chantilly with its great collections, a bequest valued at $8,000,000.

CLINICAL MEMORANDUM.

EXSTROPHY OF THE BLADDER WITH OTHER CONGENITAL DEFECTS; MAYDL'S OPERATION.[1]

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During March, 1897, there was sent to me by Dr. Williams of East Otto, N. Y., a boy four years of age, presenting a case of exstrophy of the bladder, with other congenital deviations, which seemed to make it worthy of a special report. The boy was well-nourished and of strong frame in all respects save those below noted. There was a deformity in the pubic arch of just two inches, the bone being replaced by fibrous tissue. The presenting area of the bladder was about the size of a silver dollar, both ureters presenting as papillæ, from which, even on coughing or sneezing, a little jet of urine was projected. At the upper margin of the mucous membrane was seen all that presented of the umbilicus, which appeared as a semilunar cicatrix. The penis was rudimentary and there was complete epispadias, a deep groove taking the place of the urethra. The right testicle was completely undescended and the left had remained in the inguinal canal. There was incontinence of fluid feces, and a tendency to prolapse of the rectum, due to an exceedingly weak sphincter.

I saw no prospect, under the circumstances, for any successful plastic operation, and consequently determined to turn the ureters into the colon, as suggested by Maydl. This was done in my clinic, chloroform being the anesthetic used. I first dissected away the rosette of mucous membrane around the ureters, leaving a small oval portion of the bladder wall and mucous membrane, which included the ureteral orifices. All this was done by careful dissection before opening the peritoneum; then protecting the parts by temporary compression of the ureters, I opened the peritoneum and at once came upon what at first appeared to be the stomach, so thick were its walls and so deceptive the appearance of its vessels. Further investigation showed this to be an enormously dilated colon, which lay almost in the middle line, and which extended straight up toward the sternum. Following it downward, it narrowed to a very small compass, where it became continuous in the pelvis with what, by bimanual examination, proved to be the rectum. It was then seen that a marked congenital defect of the large bowel existed along with that of the bladder. Nevertheless, there was now nothing left to do but to proceed. Accordingly this dilated colon was opened at a suitable point and compression removed from the ureters, after which they were implanted in the colon and anchored, and the wound about them made tight by fine silk sutures. It was then impossible to cover the comparatively small abdominal wound by lateral approximation, so I closed it at a right angle to the ordinary line by silkworm-gut and kangaroo-tendon sutures, leaving still a raw surface over which the skin could not easily be drawn. Then, in order to close this, I extirpated the spongy tissue of the rudimentary penis and utilized the integument of its lower surface as a flap over the defect above, which it completely and neatly closed.

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[1] Read by title before the American Association of Genito-Urinary Surgeons, Washington, D. C., May 5, 1897.

During the first twenty-four hours the boy did well, passed urine freely from the rectum, and complained but little. During the second night his stomach became disturbed, and on the following morning rejected everything. When I then tried to feed him by the rectum, it was found impossible to make the rectal pouch retain anything, because of the weakness of the sphincter, while to expose the opening between the rectum and the colon above, in order to pass the enemata higher, would have been impossible without chloroforming him and using a speculum. The result was that the boy died about fifty-five hours after the operation, during the last eight or ten of which apparently no urine was secreted, certainly not passed.

A hurried autopsy was permitted, which revealed the absence of any evidence of peritonitis, and showed the bowel condition to be about as outlined during the operation. The rectal pouch communicated by an opening, which would ordinarily admit a lead-pencil, with a large, thick-walled, and much distended colon, that extended toward the liver and had no splenic flexure.

The case illustrates beautifully the embryonic condition by which the lower opening of the alimentary canal is produced, as is the upper, *i.e.*, by an infolding of the surface and a communication with the primary tube, which is later established. In this case the opening was established, but proved utterly inadequate in size for the desired purpose; hence, I take it, the coincident deficiency of the sphincter. Whether the condition of the colon was also a return to simpler conditions and was an evidence of atavism, or whether it had been straighted out as the result of pressure, I could not make out, the autopsy having to be made under most unsatisfactory conditions.

So far as the principal procedure is concerned, I am inclined to think it worthy of performance in any case where the condition of the genito-urinary organs is as rudimentary and defective as in this. The operation of itself means, in effect, a restoration of the urinary canal to the avian type, and makes of the colon and rectum what they really are in birds, namely a cloaca. Should such complications as were met with in this instance be found, the case would necessarily assume from the outset an almost positively fatal aspect. To have turned the ureters into such a rectum as this patient had would have been impossible, while to have determined exactly the bowel condition would have been out of the question previous to a combined examination with the aid of an anesthetic.

A Conference on Balneology and Climatology.—The Russian National Health Society proposes to celebrate, next year, the one hundredth anniversary of the discovery of the mineral springs of the Caucasus by a conference on balneology and climatology.

MEDICAL PROGRESS.

A New Source of Conjunctivitis.—DESPAGUET (*Bull. Médic., No. 89*) has called the attention of the Paris Society of Ophthalmology to a special and as yet undescribed form of conjunctivitis due to infection from animals, or rather from the remnants of slaughtered cattle. He has noticed it among butchers and those people dwelling in the vicinity of slaughter-houses. The inflammation is usually limited to one eye, and consists in a kind of glandular swelling of the conjunctiva, together with considerable number of granulations of the eyelids and eyeball, which, on pressure, exude yellowish pus. The cornea is unaffected and there is no pain, but the eyelids are swollen. As a concomitant symptom, there is more or less swelling of the parotid and of the cervical glands which sometimes even suppurate. The treatment employed was that of iodoform salve and hot compresses locally, and sulphate of quinin internally. After fourteen days considerable improvement was noticed.

ABADIE also has had considerable experience with this form of conjunctivitis, among butchers especially. He has had several cases under observation in which the disease affected both eyes, and has also observed that it often occurs in an epidemic form.

A Diagnostic Sign of Fecal Tumors.—GERSUNY calls attention in the *Wiener Klin. Wochenschr.*, Oct. 10, 1896, to a symptom of fecal tumors, that is to say, of tumors formed by the accumulation of fecal matter in the large intestine. The symptom is due to a peculiar sensation which one receives by pressing deeply with the finger tips against the tumor and then withdrawing the fingers very slightly. The intestinal mucous membrane is pressed by the finger tips against the fecal matter, and when the pressure ceases, it resumes its former position, giving to the fingers a characteristic sensation.

The sensation is described as being similar to that experienced if the finger tips are covered with grease and first applied and then withdrawn from the palm of the opposite hand. Several conditions are necessary in order to produce this phenomenon in connection with fecal tumors. The mucous membrane must be sufficiently dry; the fecal mass must permit the fingers to press into its substance a little; and there must be sufficient gas to cause the intestinal wall to resume its original position when the pressure is relieved. Finally, when all these conditions are present, palpation must be made with great delicacy. Gersuny has verified this symptom in three cases of fecal impaction.

Is Albuminuria a Contraindication for Nursing?—As the children of women who suffer during pregnancy from albuminuria are usually poorly developed, and are often delivered before time, they, more than others, are in need of their natural nourishment—mother's milk—so that the question is a practical one, whether or not they are to be nursed by a woman who suffers from albuminuria to such an extent that she has to be placed on a milk diet. Most physicians forbid this, but GAMULIN (*Centralbl. f. Gynäk.*, No. 46, 1896), who has collected 138 cases under

Pinard's direction, reaches an opposite conclusion. He finds that the children of women with albuminuria who are brought up on the breast are as well developed and increase as rapidly in weight as others, and to all appearances are in nowise affected by the nephritis or the general condition of the mother. An exception is to be made in those cases in which, in spite of milk diet, the mother's albuminuria does not improve.

Suture of the Lateral Sinus.—The suture of large veins, when wounded, is a surgical procedure which very recently has come into practice, and, like the ligature and clamp to control hemorrhage, was suggested by the exigencies of operations, attempts being made by surgeons to preserve the patency of large veins in order to obviate the disadvantages, perhaps death, which would follow their closure. Successful experiments upon animals have been reported from time to time during the last eight years, and many surgeons have obtained good results by suturing the axiliary, femoral, internal jugulars, and other large venous trunks. One of the most interesting of these successes was the suture of the inferior vena cava by Schede, after its injury, in an operation upon the kidney. At autopsy, some time later, it was seen that the stitches had held perfectly, and that the lumen of the vessel was well preserved. But so far as known, Schwartz records (*Gaz. Heb. de Méd. et de Chir.*, Oct. 22, 1896) the first successful attempt at suture of the lateral sinus. His patient was a man, aged twenty-six, who presented himself with necrosis and a sinus behind the left ear, following a kick from a horse received three months before. At the operation (November 24, 1895) a piece of bone, the size of a silver dollar, was found depressed. It was adherent in part to the dura mater, and, despite every care, the lateral sinus was opened during its removal, a rent nearly half an inch in length being made. Hemorrhage was profuse, but when two fine silk stitches placed in the wounded vein were drawn tight the bleeding was controlled. The wound was lightly tamponed with iodoform gauze, and the patient made a good recovery. The central portion of the depressed area of bone was necrotic, and it was at this point that the adhesion to the sinus existed.

Suppurative Pericarditis Treated by Incision and Drainage.—Bohm (*Dutsch. Med. Wochenschr.*, Nov. 26, 1896) gives the history of a patient in whom a suppurative pericarditis developed as a sequal to influenza and pleuropneumonia. Internal medication was of no avail and death seemed imminent. One month after the beginning of the disease the pericardial sac was opened in the third intercostal space a finger's breadth from the sternal margin. More than a liter of pus and fibrinous masses was evacuated. The contents of the sac had evidently been under considerable pressure. An attempt to insert a drainage tube was abortive. The tube constantly pushed out again. The cavity was therefore drained with iodoform gauze. On account of the wretched condition of the patient the operation was performed under cocain.

The patient rapidly improved. For one week the pericardial sac was washed out with a solution of boracic acid. The opening in the pericardium closed in three weeks. Recovery was retarded by two exacerbations of the inflammatory process of the left lung. Three months after the pericardiotomy the condition of heart and lungs was once more nearly normal. One month later the patient resumed his ordinary work.

This is the fifteenth case of pericardiotomy on record. Eight of these recovered. Of the seven deaths, one in a very weak patient was apparently caused by the mechanical shock of the irrigating fluid upon the already weakened heart. One patient died thirty hours after operation, and the autopsy showed extensive fatty degeneration of the heart muscle. In one of the remaining five deaths there were abscesses in the myocardium which communicated with the pericardial cavity. In the others, death resulted from serious complications, extensive pneumonia, empyema, nephritis, etc.

It is worth noting, therefore, that of those cases in which the pericarditis was primary or only complicated by a left pleurisy, only one died; while of those in which the pericarditis developed only as a symptomatic affection in connection with pyemia and septicemia, only one recovered. From this it is perfectly plain that the operation of pericardiotomy is a relatively simple one, and ought to occupy the first place as a therapeutic measure in suppurative pericarditis. Why, then, should any surgeon hesitate to acknowledge in connection with inflammations of the pericardium the truth of the old principle *ubi pus ibi evacua* since the old prejudices against the operation have proved themselves to be merely prejudices?

THERAPEUTIC NOTES.

For Acute Gastric Catarrh.—

℞	Bismuthi subnit.	gr. x
	Potassi bromidi	gr. xv–xx
	Ac. hydrocyanici dil.	m. v
	Spt. chloroformi	m. x
	Mucilag. acaciæ.	f. ʒ ii
	Aquæ	q.s. ad ℥ i.

M. Sig. To be taken every three or four hours about ten minutes before food.—*Brunton.*

For Intermittent Malarial Fever.—

℞	Quiniæ sulph.	gr. xxiv–xlviii
	Ac. hydrochlor. dil	ʒ vi– ℥ i
	Ext. taraxaci fl.	℥ iii
	Elix. calisayæ	q.s.ad ℥ vi.

M. Sig. A dessertspoonful after meals in a wineglass of water.—*Dock.*

For the Migrain Accompanying Anemia.—

℞	Ext. cannabis indic	gr. $\frac{1}{6}$
	Ac. arseniosi	gr. $\frac{1}{60}$
	Ferri pulv.	gr. i.
	Ft. Pil. No. 1.	

M. Sig. One pill three times a day, increasing if necessary to two, or even three, pills a day.

Or

℞	Ext. cannabis indic	gr. $\frac{1}{6}$
	Pulv. digitalis	gr. ss
	Ferri lactalis	gr. ii.
	Ft. Pil. No. 1.	

M. Sig. One pill three times a day after meals.

THE MEDICAL NEWS.

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OF MEDICAL SCIENCE.

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SATURDAY, MAY 29, 1897.

THE AMERICAN MEDICAL ASSOCIATION.

THE jubilee meeting of the Association at Philadelphia next week promises to be an unusually enjoyable and interesting occasion. The officers of the sections seem to have vied with each other in their efforts to secure vigorous discussions of the most vital questions of the hour pertaining to each department. No more convincing assurance is needed that the Association is fulfilling the lofty aims of its founders than is revealed in the program of the scientific part of this semicentennial meeting.

The anniversary exercises will afford a unique feature. The narration of the early history of the organization, the circumstances surrounding the inception of the original idea, the objects to be attained, the early struggles to place it on an enduring basis, the enlisting of congenial spirits whose efforts should carry it forward to completion, and, finally, the contemplation of the result, after fifty years of existence, cannot fail to supply themes replete with interest and pregnant with inspiration for future achievement.

The hospitable doors of Philadelphia have been thrown wide open to receive her guests, and the social functions of the occasion are not the least inviting feature of the program.

Much of the success of these meetings depends upon the ability and energy with which the Committee of Arrangements performs its work. Under the leadership of its chairman, Dr. Hare, the committee has been successful in locating the various section-meetings in comfortable and appropriate quarters convenient to the main assembly hall and within easy reach of each other. By this careful forethought much time will be saved to the members, and the several sections will be enabled to begin and close their sessions promptly, thus avoiding any interference with the general sessions.

In the MEDICAL NEWS of May 22d may be found a convenient map of the city, giving the location of the various places of meeting, the principal hotels, points of interest in the city, etc.

A promising sign of the prosperity of the Association is to be found in the fact that various cities are vying with each other to secure the honor of entertaining it at its annual meeting. Denver, Colorado, is already in the field with a most cordial and tempting invitation for next year.

THE DISPENSARY ABUSE.

IN another column of this issue of the NEWS will be found the report of the Special Committee of the Medical Society of the County of New York on the Abuse of Medical Charity. There is much in this report, as there was in the discussion preceding its acceptance, that will bring home to the profession a keen realization of the unpardonable abuse of medical charity by those who are unworthy of its benefits and a knowledge of the attitude of the governing boards of hospitals and dispensaries toward efforts at reform. The issue is now clearly defined, the reforms necessary to correct the abuses are apparent, and the means of putting them in motion are plainly set forth.

The members of the committee are to be congratulated on the broad grasp of the subject which their work reveals, and the logical steps by which they pursued it to the the final drafting of a bill which met the unanimous approbation of both houses of the Legislature. That it failed to secure the approval of the Governor is no reflection upon the merits of the bill *per se*, although the careful study and consideration which it will doubtless receive before its reintroduction to the Legislature may suggest valuable improvements.

The enthusiastic endorsement of the work of the committee by the County Society cannot but strengthen the efforts that will be made in the future to obtain favorable legislation along the lines so much desired.

This action is not local, nor is it confined to the State of New York alone. The County Medical Society has set its seal of approval upon the first well-organized attempt in this country to deal adequately and forcibly with this great question of medical economics. During thirty years of medical development and progress this abuse has been growing, and each effort to lessen it has apparently served only to instil into it fresh vigor and virulence. The responsibility of assuming the burden of the fight is great, and throughout this broad land the eyes of the entire profession will be directed toward this society, with every confidence that its efforts will ultimately be crowned with success.

The amount of work performed by the committee was something prodigious, and, as suggested by the presiding officer, DR. LANDON CARTER GRAY, the details would make very interesting reading, if it were a matter of policy at this time to make them public. The signing of the bill giving control of dispensaries to the State Board of Charities, an impartial tribunal that could be depended upon to justly and equitably use its powers, was secretly opposed by an influence that in the end was successful. But now that the guns of the enemy have been unmasked, the Committee on the Abuse of Medical Charity of the Medical Society of the County of New York will be well prepared to begin the battle anew, and the best wishes of the profession throughout the country will be with it. Legislation is the only remedy, and this is sure to be achieved sooner or later, in spite of all opposition.

SILVER WIRE AS A SUTURE IN SURGERY.

NEARLY half a century has elapsed since J. Marion Sims conceived the idea of using silver wire as a suture in the treatment of vesicovaginal fistula. No sooner was the idea grasped than his fertile mind began devising ways and means for putting it into application, and a willing patient promptly submitted to its experimental use. After twenty-nine failures with various suture material, the thirtieth operation, performed upon this woman, proved permanently successful.

Not only was this the first case in which a cure was achieved by this distinguished surgeon, but it was the first successful operation for the relief of a vesicovaginal fistula ever performed in the history of surgery. No wonder, then, that Dr. Sims attributed the brilliant result to the one new factor, silver wire, and no wonder, also, when similar results crowned his efforts in succeeding operations done with the same suture material, he stood ready to announce the edict that the use of silver as a suture was the great surgical achievement of the nineteenth century.

Undoubtedly the use of silver wire in those early cases, with only the crude appliances which he himself devised, and before anything was known of sepsis and asepsis in surgical work, was the factor which gave him success. Why it succeeded in the very cases in which silk suture had failed, was only explicable to him on the ground that silk acted as a seton, while silver did not. The immediate followers of Dr. Sims accepted his edict that silver wire was the only suture that could be used successfully in vesicovaginal fistula, and used it without further inquiry into the *rationale* of its action.

As the operation became better understood, and specula and other instruments better adapted to their purpose came into use, operators in various fields were able to secure satisfactory results with suture material other than silver wire; so the sentiment gradually grew that Dr. Sims' success was due rather to the fact that he had better facilities for doing his operation, and had attained greater skill, than to the nature of the suture material.

Within the past year, however, a satisfactory explanation of the success attending the use of silver wire as a suture has come most unexpectedly from a foreign source. Dr. B. Credé, attending surgeon to the Carola Hospital of Dresden, in an address delivered before the National Surgical Society of Germany, at its twenty-fifth annual convention, held at Berlin on May 28, 1896, discussed silver and its salts, the citrate and lactate, which he termed the *itrol* and *actol*, and pronounced them the most powerful of all the surgical antiseptics yet discovered. It appears that his interest in silver as an antiseptic grew out of the observations of his father, the elder Credé, on the value of the nitrate of silver in the treatment of inflammatory affections of the eyelids of infants.

Nitrate of silver was not a success as a surgical dressing, however, on account of its chemical instability and its corrosive action on mucous membranes. While visiting the Johns Hopkins Hospital, in Baltimore, Dr. Credé was impressed with the use of silver foil as employed by Dr. Halsted, in affording an antiseptic covering for small or closed wounds. His next experiment, therefore, was made with metallic silver, using it as an antiseptic dressing for wounds. When applied to a sterile wound, he found that it remained unchanged, was non-irritating, and formed a thoroughly aseptic dressing. On the other hand, when applied to an infected wound, the products of bacterial life oxidized the surface of the silver, and, entering into combination with the argentic oxid, formed argentic albuminates, which had powerful antiseptic properties. Careful analysis developed the fact that it was lactic acid which was developed in the microbic secretions, and that when this combined with the silver oxid there was developed a lactate of silver, and in this resided the antiseptic properties.

In this discovery lies the explanation of the value of silver wire as a suture. In aseptic, sterile wounds it is non-irritating and remains unchanged. In infected wounds it supplies in itself the base of a powerful antiseptic, combining with lactic acid, and forming thus in the tissues the lactate of silver.

The experience here recorded illustrates the principle so often insisted upon that clinical observation has its legitimate field and is a faithful guide, although the scientific explanation of the conditions and results observed are not, at the time, susceptible of a rational explanation. Sims' prophetic soul rested in the belief that some day a rational explanation of the fact he asserted would be forthcoming, and in this recent discovery of Credé it seems to be fulfilled.

ECHOES AND NEWS.

The Craig Colony for Epileptics.—The bill appropriating $171,000 for buildings for the Craig Colony for Epileptics in New York has been signed by the Governor.

The New York Medical College for Women.—This institution held its thirty-fourth annual commencement exercises May 13th, and conferred diplomas upon seven graduates.

Honors for Drs. Welch and Osler.—At the annual meeting of the Academy of Arts and Sciences, May 12th, Drs. William H. Welch and William Osler were elected Associate Fellows in the Section of Medicine and Surgery.

The Duchess of Teck.—It is reported that the Duchess of Teck has been subjected to an operation for strangulated umbilical hernia. The operator was Mr. Herbert Allingham. No complication has arisen and recovery seems assured.

Yellow Fever at Quarantine. — When the steamer "Finance" arrived at New York from Colon, May 21st, it was reported that there had been one death on board from yellow fever. The eighty-eight passengers and crew were held for examination, and their effects and the steamer were thoroughly disinfected.

The X-ray and the Cinematograph.—Dr. John Macintyre of Glasgow has conceived the happy idea of combining the cinematograph with the fluoroscope and thus studying the movements of bones in living men and animals. If successful in this, there seems to be no reason why it may not be utilized also for studying or determining the heart's action.

Antivivisection in Congress.—Mr. Gallinger has reported favorably, from the Committee on the District of Columbia, the bill "For the further prevention of cruelty to animals in the District of Columbia." This bill proposes onerous and useless restrictions on the advancement of medical science. Every effort is being made, and it is hoped successfully, to prevent the passage of this bill by Congress.

A Medical Board for the New York Department of Corrections.—The visiting physicians and surgeons of the various institutions under the control of the Department of Corrections have organized a medical board independent of the Department of Charities. The board is composed of thirteen physicians and surgeons. Dr. J. P. Tuttle has been elected president, and Dr. P. R. Bolton, secretary.

The Hospital Graduates' Society Dinner.—The annual dinner of this thriving medical society was held Thursday evening, May 20th, at the Union Square Hotel, New York. A most sumptuous repast was discussed to the satisfaction of the hotel proprietor as well as those seated at the hospitable board, after which some instructive as well as amusing speeches were enjoyed, the program being enlivened by well-chosen musical selections.

New Portrait for the New York Academy of Medicine.—Dr. Webster, in behalf of some of the Fellows of the New York Academy of Medicine, presented to the Academy at its last meeting a large and handsome portrait of Dr. D. B. St. John Roosa, a former president. It is by E. Pollak. The gift was formerly accepted by Dr. E. G. Janeway, president of the Academy. It will be hung on the walls of Hosack Hall, with the portraits of other former presidents.

Doctor's Bills in Australia.—An Australian sent his consumptive son to a private hospital in Sidney, where he remained four months and was cured. The doctor sent in a bill for nearly $4000, which the father refused to pay, offering in settlement only $200, whereupon the doctor sued him. After a three-days' trial the case was decided in favor of the defendant. According to Australian law a doctor can sue only when he has a written agreement with a patient.

Nurses Receive Diplomas.—The graduating exercises of the Presbyterian Hospital Training School for Nurses, class of '97, were held at the hospital on the evening of May 13th. There were addresses by J. C. Kennedy, president of the school's Board of Managers, and by Dr. John S. Billings, as well as a lengthy musical program. Dr. Frederick Sturgis presented the diplomas and made an address. About 1500 persons were present. The graduates numbered twenty-two.

Entertainments of the American Medical Association.—In the list of entertainments of the American Medical Association at Philadelphia, published last week, two important ones, which promise to be very agreeable functions, were omitted. The Philadelphia County Medical Society gives a luncheon at the Hotel Walton on Tuesday, June 1st, at one o'clock. On the same day and hour, the trustees and faculty of the Philadelphia Polyclinic give a luncheon at the Polyclinic Hospital, Lombard street, above Eighteenth.

Antitoxin to be Tested.—The New York State Board of Health has decided that hereafter all antitoxin must be tested by the officials of the board before being placed on sale in the State. This is a very important step, as the use of antitoxin as a remedy for diphtheria is growing, and is proving more satisfactory in cases where the antitoxin has been properly prepared and is used with intelligence. The antitoxin sold in the market has been found to be unsatisfactory in some instances, and it is desired that it should be of uniform strength.

The Bubonic Plague.—The doctors sent to India by the Austrian government have reported to the Academy of Sciences at Vienna that neither Professor Yersin's nor Professor Haffkin's serum has been successful in the treatment of cases of bubonic plague. This is entirely at variance with special advices received by the MEDICAL NEWS direct from Professor Yersin through Professor Roux at Paris. Is it possible that such an indefinite report may have been inspired by jealousy of the French investigator, or does the diversity of opinion lie in the definition of what constitutes success?

The Risks and Sacrifices of Medical Men.—A phase of Professor Koch's work worth noting by those who denounce him as a monster because he experiments on pretty little guinea-pigs, is the deadly peril to himself that is incidental to his investigations, and especially in the preparation of his improved tuberculin. His report does not refer to this directly, but he warns other experimenters to remember constantly that they are dealing with the most fatal of bacilli and in their most active state. "The danger is not small," he says, "and I must confess that I have often felt, while at work, as though I were handling dynamite bombs."

Alcohol in Drug Stores.—The State Commissioner of Excise of New York has made the following ruling in the matter of filling prescriptions by regular pharmacists, where the same contains alcohol or other liquor, *viz.:* That where, in good faith, a pharmacist is obliged, in the preparation of bona-fide medical preparations, to use alcohol or other spirits in the compounding thereof for the purposes of medicine, it is not a violation of the liquor-tax law so to do, although in a town where such medicine is prepared or prescription filled, the sale of liquor, as such, is prohibited under the different questions submitted under the local-option provisions of the liquor-tax law.

Board of Pharmacy, as Amended.—Mayor Strong has accepted the bill amending the Greater New York charter in the matter of appointment of a Board of Pharmacy to examine and register pharmacists in the city. The amendment gives the appointment of two of the members of the board to the New York College of Pharmacy, of a like number to the Kings County Pharmaceutical Society, and of one to the German Apothecaries' Society. Members of the board are required only to be competent pharmacists Three-fifths of the net receipts are to go to the New York College of Pharmacy for its library fund, and two-fifths to the library fund of the Brooklyn College of Pharmacy. Penalties collected are to be divided between the institutions in the same proportion.

Free Baths in Boston.—The latest undertaking of the Metropolitan Park Commissioners is the building of a bathing pavilion at Revere Beach, within easy reach of the city limits. It will have accommodations for 1000 bathers. They have designed the most elaborate and complete bathhouse on the Atlantic coast. The landscape engineering in the vicinity of the bathing pavilion is the work of the late Charles Eliot, son of President Eliot of Harvard College. Every one of the 1000 bathers will have the benefit of privacy, and will reach the beach by means of a subway. The building will have every modern convenience, such as toilet-rooms, retiring-rooms, a large room for the distribution of bathing suits, electric lights, and a room for the storing of valuables. A big laundry will be capable of washing and drying 400 suits an hour. Only a nominal fee will be charged for the use of the bathing suits, which will be the only expense connected with the pavilion.

Life Insurance Doctors Discuss the Effects of Beer and Athletics.—The effects of beer drinking and violent exercise, such as bicycle riding, football, and track athletics on longevity were discussed at length at the annual meeting of the medical directors of the life insurance companies recently held in New York. Dr. Rogers of the New York Life said he had had occasion to make some study of what happens among persons engaged in the manufacture of beer, defined generally as brewers. It is a curious fact that the mortality among the proprietors is about as high as among the workmen, showing that they are all given to copious libations. Another curious fact is that the data indicates that Urtellos's point, emphasized by Dr. Bernacki, that mortality is very high at advanced ages, is very well borne out. The mortality is strikingly low among brewers in early years. Up to forty or thereabouts, brewers seem to be about as good risks as pretty much anybody else. After forty the mortality rises very high, and at fifty-five or sixty years of age about three brewers may be expected to die where one average person dies. Dr. J. C. Young of the Mutual Benefit Life Insurance Company said that football, bicycling, and other athletic exercise greatly impaired a person as a risk. He had observed that after violent exercise the presence of albumen was discovered in the urine.

SPECIAL ARTICLE.

THE REPORT TO THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK OF ITS COMMITTEE ON THE ABUSES OF MEDICAL CHARITY.

(Transmitted May 24, 1897.)

MR. PRESIDENT AND GENTLEMEN: In accordance with a resolution acted upon at a meeting of this Society held in October last, a committee of eleven members was appointed to devise means for the control or correction of the abuses of medical charity now existing in this city. This committee was made up as follows: J. H. Burtenshaw (chairman), A. B. Ball, Hermann J. Boldt, E. S. Bullock, Henry D. Chapin, Carter S. Cole, Alexander Hadden, William M. Polk, W. Washburn, W. H. Weston, and F. H. Wiggin.

At the first meeting of this committee two steps were decided upon: (1) To ascertain the sentiment of the governing boards of the different dispensaries regarding the proposed effort to check indiscriminate dispensing of medical aid, and (2) to communicate with the Charity Organization Society of the City of New York with the object of ascertaining if a system might be devised whereby the worthiness of applicants for dispensary treatment might be investigated and reported, and if its cooperation might be relied upon to this end.

As a result of the last-named resolution, the fact was made known that the Charity Organization Society would willingly cooperate with this Society along the lines proposed, and that it would place its general offices and staff of assistants at the service of the County Medical Society free of cost, provided the extra expense attendant upon the proposed investigations was met by contributions from other sources.

In order to determine to what extent the cooperation of the dispensaries might be relied upon, a copy of the following letter was sent to the president, secretary, or physician-in-charge of each of the ninety-five dispensaries located in this city:

"DEAR SIR: The committee recently appointed by the Medical Society of the County of New York to devise means to correct the abuses of medical charity now existing in this city respectfully asks for answers from you, in your official capacity as an officer of one of the free medical dispensaries, to the subjoined questions:

"1. Does the governing board of the dispensary approve of the movement to abolish or regulate the abuse of medical charity?

"2. Will the governing board cooperate with the committee of the Medical Society of the County of New York and endeavor to dispense free medical treatment only to those applicants that are deserving and unable to pay a physician for such services?

"3. Will the governing board agree, at such time as called upon, to display in conspicuous places in the dispensary a placard reading somewhat as follows: 'On and after [date] the case of every patient applying for free medical treatment at this dispensary will be investigated, to determine if the applicant is deserving of free medical service,' providing such agreement is not to be construed as binding the dispensary to make such investigations on its own account.

"On behalf of.................. DISPENSARY.

"(Signed)"

Replies to this letter have been received from 76 dispensaries. Of the 19 dispensaries ignoring the first circular letter, and a duplicate sent out on the 1st of April, 5 are homeopathic, 2 are under the supervision of the Department of Charities, and the remaining 12 are either private or church institutions at which but a small number of patients living in the immediate vicinity are treated. These replies were affirmative, or conditionally affirmative, to all three questions, with the exception of those received from the Dispensary of St. Mary's Free Hospital for Children, located at 435 and 437 Ninth avenue, and the Out-Patient Department of the New York Hospital, 21 West Fifteenth street.

The Dispensary of St. Mary's Free Hospital for Children treated 7101 patients during the year 1896, and during the same time the Out-Patient Department of the New York Hospital treated 9803 new patients, who made 45,832 visits to the dispensary, a majority, it is understood, being required to pay one dollar per month for the treatment received regardless of financial condition.

At a succeeding meeting of your committee it was made known that a committee having in view the same object as its own had been appointed by the County Medical Association, and that an organization known as the New York Medical Society for the Advancement of the Practice of Medicine had been formed, and on March 22d had caused to be introduced in the Legislature of the State a bill embodying certain reforms in the management of dispensaries in this city. It was the opinion of your committee that certain features of this bill were of too radical a nature to allow of its becoming a law at the present time; that any enactment designed for the control of dispensaries should apply to the entire State rather than to the city of New York alone; that, in the former case, the supervision and control of dispensaries should be placed in the hands of the State Board of Charities; and finally, that, as far as practicable, the efforts of the different committees formed for the same purpose should be directed alone the same lines. Your committee feels that great credit is due the members of the New York Society for the Advancement of the Practice of Medicine, and the members of the committee of the County Medical Association for their efforts toward the control of the charity abuse, and thanks for their hearty cooperation with your committee toward this end.

The bill introduced in the Legislature by the first-named organization was ultimately amended so that its provisions read as follows:

SECTION 1.—By this act a dispensary is defined to be any institution, agency, or place, society or association, whose actual, or alleged, purpose it is to furnish gratuitously or at a merely nominal price to indigent, needy, or other persons not resident therein, medical, or surgical relief, advice, or treatment, medicine, or orthopedic, or other appliances.

Section 2.—On or after the first day of October, 1897, it shall not be lawful for any one to establish, conduct, or manage at any place in this State a dispensary not duly incorporated as such under the laws of this State, or not connected with another corporation and licensed by the State Board of Charities.

Section 3.—In no case shall a dispensary be established, carried on, or conducted in any place in this State commonly known as a drug store, nor in any place or building in the State defined by law, or by an ordinance of a Board of Health, as a tenement house.

Section 4.—It shall not be lawful for any person or persons to display the word "dispensary," or to cause the same to be published in any form, or in any manner, in order to attract any indigent, needy, or other person to any dispensary not duly incorporated or licensed, as provided in Section 2 of this act.

Section 5.—Any person who shall by means of any wilful false representations on his or her part obtain at any dispensary medical or surgical relief, advice or treatment, medicines, or orthopedic or other appliances, or any person who shall wilfully violate any of the provisions of this act shall be guilty of a misdemeanor and, upon conviction, shall be required to pay a fine of not less than fifty nor more than two hundred and fifty dollars.

Section 6.—The State Board of Charities is hereby empowered to make rules and regulations and to alter and amend the same when in its opinion necessary, in accordance with which indigent, needy, or other persons shall be given medical or surgical relief, advice or treatment, medicines, and orthopedic or other like appliances by such duly incorporated or licensed dispensaries, and the said Board is empowered, a chance for a hearing having been given, to annul the incorporation, or suspend the operations or to revoke the license of any dispensary for wilful neglect or failure on the part of its managers, trustees, officers, or employees to comply with the rules and regulations so established by said Board, but nothing in this act contained shall be considered to mean that said Board shall have power to determine the particular school of medicine under which the dispensary shall be conducted.

Section 7.—All acts or parts of acts inconsistent with the provisions of this act are hereby repealed.

Section 8.—This act shall take effect on the first day of October, 1897.

This bill was passed without a dissenting vote by both Senate and Assembly on the 14th day of April last, but up to the present time has not received the signature of the Governor. This fact is peculiarly unfortunate as, according to the law of the State, all bills that do not receive the approval of the Governor within thirty days of the adjournment of the Legislature lapse and become void, and in the present instance this time limit expires at twelve o'clock to-night. This failure on the part of the Governor to approve the bill can perhaps be attributed only to pressure of official business, as at the date of adjournment of the Legislature, on April 24th, there were more than 700 enactments awaiting his signature.

The President of this Society, your committee, the President of the County Medical Association and the members of its committee, and the members of the Society for the Advancement of the Practice of Medicine have thoroughly appreciated the importance of this bill and the necessity of its becoming a law, and every influence at their command has been brought to bear toward this end. As no opposition was made to the passage of the bill in either branch of the Legislature, and as the profession, not only in this city, but throughout the State, is practically unanimous in commending its main features, the sense of disappointment is the more keen at the failure of the Governor to stamp the measure with the seal of his approval.

In anticipation of the bill being signed, the State Board of Charities, at a meeting held on the 14th of April last, appointed a committee of three of its members to hold public meetings immediately after the bill became a law for the purpose of receiving suggestions regarding the promulgation of rules for the management of dispensaries, and it was the intention of your committee to ask for authority from this Society to represent it before that body. In view of the failure of the Dispensaries bill to become a law, your committee is in a position only to recommend that the Committee on the Abuse of Medical Charity be continued indefinitely, and that it be empowered to take such steps as may appear to it advisable toward obtaining future legislation in the direction of correcting or controlling the medical charity abuse.

In conclusion, your committee expresses the conviction that there is no species of charity so beneficent, so far-reaching, or so generously bestowed as true medical charity, and that nothing could be further removed from its wish than that it should be curtailed or kept from the reach of the deserving poor; but it has been so conclusively demonstrated that there exists such gross and unpardonable abuse of that charity on the part of those who are not entitled to it that it has become imperative to adopt radical measures for the suppression of that abuse, and at once.

Respectfully submitted.

(Signed) JAMES HAWLEY BURTENSHAW, *Chairman.*
EARL SPRAGUE BULLOCK, *Secretary,*
A. B. BALL,
H. J. BOLDT,
HENRY DWIGHT CHAPIN,
CARTER S. COLE,
ALEXANDER HADDEN,
W. M. POLK,
W. WASHBURN,
W. H. WESTON,
F. H. WIGGIN.

CORRESPONDENCE.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

THE ATTENDANCE AT THE COMING MEETING OF THE AMERICAN MEDICAL ASSOCIATION — COMMENCEMENTS OF THE WOMAN'S MEDICAL COLLEGE AND MEDICO-CHIRURGICAL COLLEGE — PHILADELPHIA PEDIATRIC SOCIETY—SECTION ON GYNECOLOGY OF THE COLLEGE OF PHYSICIANS—FREDERICK DOUGLASS MEMORIAL HOSPITAL — CHANGES IN THE FACULTY AT THE PHILADELPHIA POLYCLINIC—DR. WILLIAM THOMSON.

PHILADELPHIA, May 22, 1897.

As the time for the coming meeting of the American Medical Association approaches it grows more and more apparent what an important convention this is destined to become, both in the number of members in attendance, for it is now fully expected that the early anticipations for the attendance of three thousand will be realized, and in the importance of the scientific business transacted, from a synopsis of which it is evident that every field of medicine and of surgery will be fully covered. In some instances, it is to be regretted, there is such a plethora of material for thought and discussion, that the scientific value of the proceedings is threatened. However, the number of "read by title" papers will, as is always the case with these large gatherings, in all probability allow ample time for the discussion of those subjects which are presented at length.

On Tuesday, June 1st, there are to be special exercises held at the Academy of Music, commemorative of the fiftieth anniversary of the founding of the Association, at which addresses of historical interest will be delivered by prominent members.

In addition to the entertainments already provided for the visitors it is now announced that there will be an elaborate garden party on the campus of the University of Pennsylvania, tendered them by Provost Harrison, of this institution.

The forty-fifth annual commencement exercises of the Woman's Medical College of Pennsylvania were held in the Academy of Music, on May 19th. Degrees were conferred upon the members of the graduating class, which numbered twenty-eight, by Lucretia M. B. Mitchell, of the Board of Corporators, and an address delivered to the graduates by Professor Frederick P. Henry, of the Faculty. The annual dinner of the Alumnæ Association took place the same evening at The Rittenhouse.

On May 18th the graduating exercises of the Class of 1897 of the Medico-Chirurgical College took place in the Academy of Music. Sixty-six members of the class received their degrees from the President of the Board of Trustees, C. William Bergner, and were addressed by Professor William E. Hughes. The Alumni Association of the College held its yearly banquet at the Hotel Stratford, on the evening of May 17th, at which speeches were made by Judge William B. Hanna, the Rev. C. Ellis Stevens, Rufus E. Shapley, C. William Bergner, Dr. John W. Croskey, and Dr. John V. Shoemaker.

At the last meeting of the Philadelphia Pediatric Society, held on May 18th, Dr. S. W. Morton presented an interesting discussion of the question of paralysis in children as a sequence to measles, and reported a case of this character; during the course of this paper, which was discussed by Dr. J. P. Crozer Griffith, Dr. Morton took occasion to draw attention to the dearth of text-book literature which exists on this topic, although here and there monographs on the subject may be found. A paper was also read by Dr. D. J. Milton Miller, detailing the history of a case of infantile scurvy, and discussing this rare disease.

At the last stated meeting of the Section on Gynecology of the College of Physicians, on May 20th, Dr. John C. Da Costa reported a celiotomy, in a woman five-months pregnant, for the removal of an ovarian cyst, and with restoration to its normal position of the retroflexed and adherent pregnant uterus, resulting in recovery without miscarriage, also of dormoid cyst, of apparently rapid growth, and weighing twelve pounds, removed by abdominal section; and a large polyp, from a woman of advanced years.

Dr. J. Montgomery Baldy exhibited a specimen of a varicosed condition of the veins of the broad ligament, which he removed on account of the intolerable pain suffered by the patient; the operation resulted in a complete cure of the symptoms complained of. Dr. Baldy suggested that this condition would probably explain the cause of many of the ills in women, in which the etiology is unaccounted for.

The first commencement exercises of the class of nurses of the Frederick Douglass Memorial Hospital occurred on May 21st, when two nurses who had completed their course of training in this institution were graduated. The event was one of interest in that it marks the end of the second year's existence of a hospital devoted exclusively to colored people, and engaged in the training of colored woman as nurses. The hospital, which is in a flourishing condition, was founded by Dr. N. F. Mossel, a well-known colored practitioner of this city, and is largely supported and managed by persons of this race. That there are many negro women desirous of taking up trained nursing as a calling is shown by the fact that there are at the present time more than one hundred applications on the waiting list for admission to this hospital's training school.

The resignation of Dr. Charles W. Burr, Professor of Diseases of the Mind and Nervous System in the Philadelphia Polyclinic, has been accepted by the trustees of the school. Dr. Burr's successor to the Chair has as yet been unnamed. In this institution Dr. G. Hudson Makuen has been elected Professor of Defects of Speech, a position recently created; and Dr. T. B. Schneideman to the Chair of Diseases of the Eye.

Dr. William Thomson, who recently resigned the Chair of Ophthalmology in the Jefferson Medical College, has been made Emeritus Professor of this branch, in recognition of his long and valuable services to this institution.

The Maine Medical Association.—The forty-fifth annual meeting of this society will be held at Portland, Wednesday, Thursday, and Friday, June 2d, 3d, and 4th.

OUR VIENNA LETTER.

[From our Special Correspondent.]

MEDICAL STUDENTS AT THE UNIVERSITY — POST-GRADUATE COURSES DURING AUGUST AND SEPTEMBER—THE INTERNATIONAL CONGRESS AT MOSCOW.

VIENNA, May, 6 1897.

THE official University announcements for the summer semester have just been published, and with them the number of students registered during the winter session. Altogether 7026 students were in attendance in all departments. Of these, 2752 were registered in the medical department, 1592 as regular students, 425 as special students, and 735 as taking post-graduate courses. Of the post-graduates, 118 are from America, North and South, most of them, however, from the United States. This is a larger number of post-graduates than are registered from any other country, even Austria itself, and serves to show how popular Vienna is with American medical students.

The proportion of medical to other students is somewhat more than one to three, and is about the proportion that exists everywhere in Europe, and about the same as occurs in our own universities. It is not surprising that complaints are heard on all sides that the profession is becoming overcrowded when more than one-third of all those receiving a university education are devoting themselves to medicine. The figures given do not represent the whole truth here on the Continent, however, for a certain number of those included among the philosophic students will later turn to medicine as the utilitarian completion of their education.

Among the announcements that seem of interest is that of the continuance of post-graduate work during the months of August and September. Somewhat as an experiment, a certain number of courses were continued during last summer, and with such satisfactory results that more are to be added this year. Visitors to the congress at Moscow, in August, will have an opportunity to do some work in Vienna before and after the congress, if so inclined, and may thus gain an idea of the very practical teaching methods of the Vienna school.

Another announcement is to the effect that, beginning with the winter semester in October of this year, the philosophic courses of the University will be opened to women on the same conditions as to men. Their admission to the medical department is put off for a time until certain contemplated reforms in the medical course are effected. Since the recent "promotion" of a woman to the Doctorate in Medicine the admission of women to full university privileges has been looked forward to with a good deal of assurance. The concession is commented on very favorably from nearly all sides, and though some of the opinions expressed show that there are certain ones who are inclined to be dubious as to the outcome of higher education for women, there has been no actual opposition to the movement. Women from foreign countries are excluded from these privileges, however, as students must be natives of the Empire, or at least *bona-fide*, permanent residents, and must have made their preparatory studies successfully in one of the Austro-Hungarian gymnasia.

The reforms in the plan of medical studies spoken of have been in contemplation for some time. Certain purely scientific studies with only slight bearing on medicine, as mineralogy, zoology, and botany, are to be dropped from the course. The examinations in anatomy, physiology, chemistry, etc., which up to now could be put off till the last year, will have to be passed before the practical clinical work is taken up. Finally, one of the five years of the medical course will have to be passed in hospital service before the candidate will be given a license to practise. All the details of the proposed changes are not yet definitely settled, but these are the general lines along which they are to be made. At the same time the question of the remuneration of professors is to be definitely settled. The present unsatisfactory method (at least to some members of the faculties) of being paid according to the number of students in attendance on their courses is to be exchanged for the fixed-salary system. As things are now, some of the really scientific workers, but whose lectures involve theory rather than practice, are very unsatisfactorily paid because their courses are not attractive to students, while some of the lesser lights, particularly some of the specialists or professors whose examinations are known to be especially hard, are very handsomely paid by the crowds that flock to their lectures.

One of the most striking things in Vienna, I think, especially for the American medical student, is the autopsy-room of the *Allgemeines Krankenhaus* (General Hospital). Certain feelings of what one cannot help but call false respect, not for the dead but for dead bodies, make autopsies even in interesting cases comparatively rare with us. Even in State institutions too often the same mistaken feelings dictate that autopsies shall not be public. The result is that many a young doctor begins practice after having seen but two or three autopsies and with the haziest ideas as to the macroscopic appearance of diseased organs. The value of exact notions as to pathologic, anatomic lesions cannot be overrated. The false sentiment that now practically prevents this is of too serious importance to be permitted longer to exert the sway that it does if real progress is to be made in practical medicine. It is to doctors themselves that medicine must look for the gradual modification of the ideas that dictate the present policy.

Here every interesting fatal case comes to the autopsy-table. The practical importance of it for diagnostic purposes is evident any and every day. Out of the eight to fifteen daily autopsies at least one sometimes two or three reveal conditions that have been missed after the most careful diagnosis. Here are some samples of the last ten days. Clinical diagnosis: "Senile marasmus with hyperscoliosis;" vertebral caries (with a question mark). Report of autopsy: "Carcinoma of the stomach with metastasis to vertebræ; consequent softening of the bodies of two lumbar vertebræ, dislocation, and compression of cord."

Another case. Clinical diagnosis: "Pleurisy." Report of autopsy: "Carcinoma of the stomach with metastasis to liver; some pleuritic effusion at base of lung." It was the lung symptoms evidently that had brought the patient to the hospital. The physical examination had brought out the fact of the presence of effusion which was thought to be much greater in quantity than it was owing to compression of the lung by a cancerous mass of considerable size just below the diaphragm. A third case. Clinical diagnosis: "Anemia from metrorrhagia; extra-uterine pregnancy; death from epistaxis." Report of autopsy: "Universal organic anemia; cystic conditions of both ovaries; adhesions to uterus; peri- and endometritis." All of these patients came to the hospital in the last stages of disease when opportunities for diagnosis were limited and when the hopelessness of the cases awakened little interest in the conditions present. There are good excuses for what are not mistakes but omissions of details in examination. The lesson they teach is an invaluable one, and it is only this perfectly blunt and *cold-blooded* comparison of the clinical with the *post-mortem* findings that can properly bring it out and make it impressive.

The authorities of the city of Moscow, and especially the medical profession, are said to be sparing no effort to make the visitors to the coming international medical congress thoroughly welcome. From St. Petersburg now comes the additional news that special arrangements are to be made there for the entertainment of the foreign attendants upon the congress, most of whom, it is confidently expected, will visit the capital during their Russian trip. The city has just appropriated 5000 rubles (nearly $3000) for the entertainment of medical visitors. A general guide to the city and a special medical guide is to be issued for their benefit. The Court, it is said, is interested in producing a favorable impression on the visitors, and official circles generally will be led by this circumstance to make an effort to have the visit pleasantly remembered by all.

TRANSACTIONS OF FOREIGN SOCIETIES.

London.

EPIDEMIC OF INFANTILE PARALYSIS—MALIGNANT STRICTURE OF THE ESOPHAGUS TREATED BY SYMONDS' TUBE—SUCCESSFUL REMOVAL OF A TUMOR OF THE BRAIN—SARCOMA OF THE PROSTATE—HYDATID CYSTS OF THE PLEURA, MESENTERY, AND LIVER SUCCESSFULLY TREATED BY OPERATION—A RECTAL CALCULUS—A NEW ANESTHETIC INHALER.

AT a meeting of the Clinical Society, held March 26th, **PASTEUR** read a paper on *an epidemic of infantile paralysis* limited to the children of one family. Every one of the seven children was attacked within a period of three weeks with fever of moderate severity and intense headache. In three of the children paralysis, not always of the same muscles, followed, within seven days, the beginning of the symptoms. In two others there was no paralysis, but tremors occurred, lasting a few days. In the remaining two cases there were no nervous symptoms.

Diphtheria and influenza were excluded, and a diagnosis of infantile paralysis was made from the points of resemblance to that disease. These cases confirmed the growing impression that infantile paralysis is an acute infective disease.

CAYLÉ said that the cases were clearly instances of an acute specific fever. The term "infantile paralysis" is not always appropriate, and these cases show that anterior "poliomyelitis" is inadequate, since other lesions in the region of the anterior horn may be present. A satisfactory name would greatly stimulate clinical work upon this subject.

LOCKWOOD mentioned a case of *malignant stricture of the esophagus treated with Symonds' tube*, in which the safety-string was swallowed. Every effort to extract the tube failed. As it was not known whether the tube was still in the esophagus, it was decided to perform gastrostomy rather than esophagotomy. The operation gave much relief. The tube was not found, however. Three weeks later the patient died from bronchopneumonia, and the tube was found in the stomach at autopsy.

WASHBOURN and **LANE** described a *successful removal of a tumor of the brain*. The tumor grew from the pia, and deeply indented the brain substance immediately in front of the upper limit of the fissure of Rolando. The tumor was sharply defined, and shelled out easily, although there was a slight attachment to the gray matter at one point. The growth measured 2 by 1.5 inches, and had a depth equal to its breadth. The convolutions depressed by it were the precentral, with the adjacent area of the first frontal and part of the second frontal and marginal convolutions, and probably to some extent the gyrus fornicatus. The operation was followed by aphasia and paralysis of the right arm and right side of the face. The aphasia soon disappeared. Four months later there was complete motor paralysis of the right hand and forearm, with impaired sensation in the fingers. The facial paralysis had disappeared. The patient had been subject to fits before the operation, but there have been none since, and now (six months after operation) movement is returning in the fingers.

At the meeting held April 9th, **MARSH** reported a case of *sarcoma of the prostate*, in which death followed an exploratory operation. The tumor measured seven and one-half by four and one-half inches, and was inclosed in a firm fibrous capsule. It proved to be a spindle-cell sarcoma.

SPENCER described a case in which *hydatid cysts were removed from the left pleural sac, from behind the mesentery, and from the right lobe of the liver.* The pleural cyst was first removed, and, two months after the first operation, an abdominal incision was made, the mesentery cut through, and the cyst, which was situated behind the mesentery, and distinct from the liver, was removed. The wound was closed, and the cyst in the liver reached through an incision in the tenth interspace in the right mid-axillary line. The diaphragm was stitched to the upper edge of the wound, and then incised. The cyst was one and one-half inches within the liver. Fluid shreds and hooklets came away at first through the wound, which gradually healed up. Except in case of the liver, the parasitic cyst was removed without tearing it by passing a stream of water from an irrigator between it and the adventitious cyst after the latter was freely opened.

Spencer pointed out the dangers of aspiration of these cysts; incision being far safer.

At the Pathological Society, April 6th, CRIPPS showed a *concretion removed from the rectum* of a woman, aged sixty-three, who had suffered from almost constant diarrhea, without hemorrhage. The stone weighed nearly eight ounces. Its origin was unknown.

At a meeting of the Society of Anesthetists, held March 18th, HOLIDAY showed *a new anesthetic inhaler*, which consisted of a small bottle with a wide neck, to which was fitted a cork bored for the passage of two tubes. One admitted air to pass over the chloroform, and to take up its vapor, while the other allowed the escape of the mixture of air and vapor. The current of air is kept up by a small bellows, which forces it on toward a mask fitted over the patient's face. Recovery after the use of this inhaler is prompt, and unaccompanied by the nausea which usually follows anesthesia by the open method.

Berlin.

INTERNAL DERANGEMENT OF THE TEMPOROMAXILLARY ARTICULATION—POSSIBILITY OF DISSOLVING URIC-ACID CALCULI.

At the session of the Medical Society, held March 10th, BRUCK presented a girl, aged twenty, who, three months previously, was greatly troubled by a *cracking in the left articulation of the jaw*, coming on not only in chewing, but at every attempt to open the mouth. Accompanying this was a darting pain, and at times an inability to close the mouth. The noise was so loud that she was made sport of by her companions, and fell into the habit of swallowing her food without chewing it, a procedure which speedily caused indigestion and constipation.

Examination showed that if pressure was made with a finger-point upward and inward upon the offending joint, the crack was not heard. It was suggested that the patient wear, during meals, a sort of truss, which should press upon the joint in the manner described, while retaining its own position by a band about the head.

At the session held March 24th, MORDHORST said that he did not share the common belief that there are no efficacious means of dissolving uric-acid calculi. His experience has shown him that every alkalin urine not containing too much of any calcium salt is capable of dissolving uric-acid calculi. The popular belief in the insolubility of these calculi is due to the following facts: If one of these stones is held in a glass of alkalin urine it immediately begins to dissolve. If the urine is very strongly alkalin, the dissolved salts remain in the neighborhood of the stone, and a stroma is formed, visible under the microscope. From the stroma organic substances are dissolved, which unite with the alkali, and form a complete bark, as it were, around the stone, thereby preventing the further action of the alkali upon the uric acid. In other words, the uric-acid calculus is completely surrounded by a layer of urates. If, however, the urine in which the calculus is suspended is frequently changed, these urates will be dissolved, and more and more of the calculus will be exposed to the solvent action of the urine. Exactly the same action may take place in the body. It is immaterial what medicine is employed to make the urine alkalin. Mineral waters taken for this purpose must not contain much calcium, however, because the salts of calcium delay the solution of organic substances. Mordhorst stated, further, that this was not a matter of theory merely, but that in numerous cases he had seen fairly large calculi broken up and voided under the influences of copious draughts of a suitable mineral water.

KUTNER expressed doubt as to the correctness of Mordhorst's explanation of these clinical phenomena. He had had no opportunity to observe them himself, but he expressed himself as convinced that the great increase of urine had mechanically flushed out of the recesses of the pelvis of the kidney, or of the bladder, the calculi which were lodged there, and that the much-wished-for "solution" was by no means proven.

SOCIETY PROCEEDINGS.

AMERICAN LARYNGOLOGICAL ASSOCIATION.

Nineteenth Annual Meeting, Held at Washington, D.C., May 4, 5, and 6, 1897.

SECOND DAY—MAY 5TH.

(Continued from page 654.)

DISCUSSION ON ATROPHIC RHINITIS.

DR. W. E. CASSELBERRY of Chicago opened the discussion, speaking on nature and symptoms. He said that the affection might occur in either the young or old. No one theory of causation was borne out by all cases. The latter were fetid and non-fetid. The atrophy may be due to one and the odor to another. The writer would incline to a division of cases of atrophic rhinitis into (1) simple dry catarrh and (2) ozena, and in a general way the lesions consisted of atrophy in all stages, with possibly a degeneration of the mucous glands and crust formation.

The theory of a primary central trophic neurosis has been advanced. Support is lent to this view by the fact that the disease is generally bilateral. It is true that in case of deviated septum, the affection seems more advanced on the concave side, but as soon as the position of the cartilage is rectified, the nostril improves and the mucosa often assumes a healthy appearance.

In both types the atrophy varies in degree and distribution. Hypertrophy need not exhaust itself before atrophy begins. The middle turbinate may be hypertrophied and the inferior atrophied. Grünwald has claimed that most cases of atrophic rhinitis are due to sinus disease, but this theory has not been generally accepted. Bosworth has referred the disease to a previous suppurative disease of the nasal mucosa. The fetor of these cases has been referred to a microbic origin. Fränkel and Löwenberg have isolated a coccus; Abel has found a bacillus mucosus; Wyatt Winpari, various hyaloid bodies, possibly of a microbic nature; while more recently Belfanti and Della Vedova have found a bacillus closely corresponding to that of diphtheria.

Symptoms frequently include, in addition to those directly referable to the nose, impaired hearing and voice. Ear symptoms may precede the nasal.

The discussion was continued by DR. J. N. MACKENZIE, who spoke of the structural changes occurring in the disease, and the order of their appearance. It must be remembered that we are dealing with changes in an important physiologic organ as well as in a mucous membrane. At present, there is a haze of opinion about the matter. The term atrophy is used in a loose sense. We fail to discriminate between the different forms of atrophy and the different causes producing them. There may be simply atrophy and again one of degeneration. The ideal term is sclerosis, where we may have an atrophy of the specific nasal tissues and a hypertrophy of the surrounding connective tissue. There is a cell infiltration, granulation tissue, obliteration of old and formation of new vessels. Sclerosis may result from blood infection, as from tubercle and syphilis, or from intoxication, especially that of alcohol. Preceding purulent catarrh is probably not a cause, for such a sequence has no known parallel in any pathologic processes with which we are acquainted. The task of the future is to detect the origin of this sclerotic process. The disease may be atropic, *ab initio*, commencing in the periosteum, but this is improbable from the clinical, as well as the anatomic, appearances observed.

DR. C. C. RICE of New York spoke on treatment. This should be constitutional and local. The former would include in the broadest sense the various hygienic measures. He had seen one group of cases improve by removal to the country and the change of occupation from factory to farm. In general, we had to aim at cleanliness and stimulation. The latter might be accomplished by anyone of a number of drugs, by electricity, cataphoresis, tampons, etc. We should be careful to avoid any destruction of tissue. He considered the oily preparations as of great value, both from their power to lubricate and to act as vehicles. The nasal douche cup would carry sufficient fluid for each act of cleansing. He was accustomed to apply the oily preparations by friction, polishing as it were the inside of the nose. In young children with profuse watery secretion powders might be used, not otherwise.

THIRD DAY—MAY 6TH.

SIMULATED SARCOMA OF THE TONSIL; REPORT OF A CASE.

THIS paper was read by DR. D. BRYSON DELAVAN of New York. The tumor grew on the left tonsil of a man aged forty-five, who had a negative family history, and who presented no syphilitic manifestations. The tonsil was moderately enlarged and sore. Its central portion was broken down, leaving a hollowed surface with overhanging edges. The rest of the organ was indurated. There was an enlargement of a gland under the jaw, with pain on palpation and swallowing. The patient was placed on potassium iodid while a bit of the tonsillar tissue was given to Dr. Hodenpyl for examination. Several other pathologists examined it, and pronounced it sarcoma. Dr. Hodenpyl was not sure of the correctness of this view. Under the iodid the glandular enlargement disappeared. The tonsil was removed with a cold snare. The microscopic examination showed chronic hyperplasia, with a large amount of endothelial cell growth, the arrangement of the histologic elements suggesting sarcoma; but after removal the patient did well, and has been in good health since. The case was therefore to be regarded as one of simulated sarcoma.

A NEW METHOD OF PERMANENT RELIEF FOR CERTAIN ENLARGEMENTS OF THE TURBINATED BODIES.

DR. DELAVAN also read a brief paper with this title. He deplored the over-use of the cautery, and thought that much of its employment was futile, as its effects were superficial, and but temporary in duration. The mucosa was also unnecessarily destroyed. He suggested the employment of a small knife, such as is used in eye work. Under cocain the knife may be passed into the turbinated bone, swept around through the tissues, and withdrawn through the same opening, care being taken not to enlarge the latter. It is better to operate a second time rather than to cut too deeply at first. Pain and bleeding are both slight. The latter should be allowed to stop of its own accord. It is also advisable to use cocain freely for some hours after operation.

DR. CASSELBERRY thought that while this procedure would be of service in anterior enlargements, it would not answer when the enlargement was posterior. He alluded to the method of submucous linear cauterization as practised by Dr. Pierce of Chicago.

DR. WRIGHT said, with reference to the case of tonsillar tumor reported by Dr. Delavan, that it was hardly fair to a pathologist to give him only a bit of tissue and expect him always to make a definite and reliable diagnosis. The pathologist should be given all information possible relative to a given case.

A CASE OF SUBGLOTTIC TUMOR CAUSING GREAT DYSPNEA; REMOVAL BY TRACHEOTOMY AND CURETTAGE

was reported by DR. JOHN W. FARLOW of Boston.

The case was that of a woman aged thirty-seven, the history dating back four years. One year after the onset of her trouble she came under the care of a physician in St. Louis, who noted a thickening of the septum nasi. At this time the woman was having so much difficulty in breathing that a tracheotomy was performed. It was found that there was a tumor on the posterior wall of the trachea, pressing on and partially occluding the lumen of the esophagus. It was sessile in character, three-eighths of an inch wide, and one and one-eighth inches long. The color was brown and the consistency soft. Removal was deemed unadvisable, owing to the fear of producing an unmanageable tracheo-esophageal fistula. After the tracheotomy the breathing was greatly improved. She continued well, with only occasional discomfort, until January, 1897, when she came under Dr. Farlow's observation. Her breathing was then difficult and wheezing.

Examination of the larynx showed the cords to be freely movable. The voice was not hoarse. A tumor could be seen filling the trachea below the cords, and presenting the appearance of being made up of several distinct masses. A non-malignant diagnosis was made, the growth being considered an enchondroma. A low tracheotomy was performed, and the trachea opened above the tube. The tumor was found to consist of one mass, with a lobulated superficial division. It was removed with the curette without difficulty, and, on examination, proved to be a fibroma.

PAPILLARY EDEMATOUS NASAL POLYLPI AND THEIR RELATION TO ADENOMATA.

DR. JONATHAN WRIGHT of Brooklyn read a paper with this title.

He reviewed the literature of a series of reported cases, and added notes of some which had come under his own observation. The point made in the paper was that there are a series of intranasal growths which to the unaided eye look exactly like the ordinary polyp and which are in reality quite different. There may be a gradual shading of one into the other so that all grades of transition are seen from the ordinary polyp to the true adenoma.

A CASE OF ADENOCARCINOMA OF THE NOSE.

This paper was read by **DR. F. E. HOPKINS** of Springfield, Mass. The case was that of a man eighty-three years of age whose family had a tuberculous taint but was free from tumors. Nasal obstruction had existed for twelve years with a watery discharge, but no pain or bleeding. A growth was found in the nose and its removal was attempted, but on account of hemorrhage, was abandoned. Shortly afterward some masses resembling polyps were removed. In April of the present year the patient came under the observation of the writer. No operation had been performed during the previous three years. At that time he was troubled with occasional bleeding at the nose and with a constant sanious, foul-smelling discharge. The left eye was displaced outward. The nasal septum had been crowded over to the right side posteriorly. With a cold wire snare, the mass was removed without difficulty. Bleeding was slight. Examination of the tumor showed in some places a tubular and in others an acinous arrangement of cylindrical cells and a few additional irregular cells masses.

DR. SWAIN called attention to the similarity of structure between the ordinary polyp of the ear and the papillary adenomata found in the nose. He believed that the papillary appearance was due to the fibrous tissues as well as to the cell elements.

A CONTRIBUTION TO THE STUDY OF LARYNGEAL PHTHISIS,

was the title of a paper by **DR. T. MORRIS MURRAY** of Washington. The writer had presented a paper on this subject in 1894 and the present communication was a review of the progress made since that time. He spoke of the good effects he had had with enzymol as a digester of necrotic tissue. He believed that the internal use of creosote is of the highest value.

DR. E. FLETCHER INGALS of Chicago said that he preferred the carbonate of creosote to creosote itself. The former could be given in even dram doses and was much better borne by the stomach.

The next paper, entitled

PRIMARY LUPUS OF THE LARYNX

was read by **DR. EMIL MAYER** of New York. He gave the history of two cases occurring in his experience. The first was of a man aged thirty. One week before coming under observation he had coughed up blood, and had had small daily hemorrhages for a week after. Cough, dysphagia, hoarseness, and fever were all absent. Examination showed the entire surface of the laryngeal aspect of the epiglottis to be ulcerated. The edges of the ulcer were granular and were covered with a whitish deposit with numerous small nodules on the free edge. The deepest point of ulceration presented an erosion like the open mouth of a small vessel. The arytenoids were normal. There were no bacilli in the sputum. There was no evidence of syphilis, but there was a small spot of consolidation at the apex of the left lung.

Under lactic acid applications, with menthol, and the use of creosote internally, the patient improved rapidly, the hemorrhage never returning after the third day. Ten months later, it was found that the epiglottis was thickened, with a nodular excavation in its central portion. In addition, the mucous membrane of the epiglottis adjacent to the ulcer, was puffy and edematous. The edematous folds hung like pouches over the larynx, obscuring its interior. The lung condition was about the same as when first noted.

Primary lupus of the larynx, while rare, undoubtedly does occur. Fourteen other cases have been reported. The condition must be differentiated from tuberculosis, syphilis, carcinoma, and leprosy.

The reader of the paper drew the following conclusions: (1) Primary lupus of the larynx does exist. (2) It is a painless affection and may go on for years unnoticed. (3) Tubercle bacilli are present in small numbers, although difficult to find. (4) Its similarity to syphilis in appearance is greater than that of tuberculosis. (5) The absence of adhesive bands is characteristic of lupus, while always present in late syphilis. (6) The prognosis as to life is remarkably good.

FOUR CASES OF SARCOMA OF THE NASAL CAVITIES

were reported by **DR. J. E. H. NICHOLS** of New York.

Several papers were then read by title.

DR. JOHN O. ROE of Rochester exhibited an instrument for dilating the trachea in cases of stenosis.

The following were elected to active membership; J. Payson Clark, M.D., Boston, Thesis, "Nasal Polypi"; J. Edwin Rhodes, M.D., Chicago, Thesis, "Atrophic Rhinitis"; James E. Logan, M.D., Kansas City, Thesis, "Laryngitis Rheumatica, with Report of a Case"; Richard Frothingham, M.D., New York, Thesis, "Benign Retropharyngeal Tumors, with Report of Cases." H. Luc, M.D., of France, Paris, was elected to corresponding fellowship.

The annual election of officers resulted as follows:

President, Thomas R. French, M.D., of Brooklyn; first vice-president, Alex. W. McCoy, M.D., of Philadelphia; second vice-president, Herbert S. Birkett, M.D., of Montreal; secretary and treasurer, Henry L. Swain, M.D., of New Haven; librarian, J. H. Bryan, M.D., of Washington.

It was voted to hold the next Congress in Brooklyn, the date to be selected by the Council.

AMERICAN PEDIATRIC SOCIETY.

Ninth Annual Meeting, Held at Washington, D. C., May 4, 5, and 6, 1897.

THE first session was opened by the President, DR. SAMUEL S. ADAMS of Washington, who delivered an address entitled "The Evolution of Pediatric Literature in the United States." In this address he reviewed, in chronologic order, the various works on the diseases of children which have been written in this country during the past one hundred years. Every author writing upon this subject before 1870 was mentioned. Since that date the contributions have been too numerous to receive individual mention. The first definite contribution to pediatric literature was made by Dr. Rush in 1789, in a description of influenza. Following this were mentioned the names of Caldwell, 1796; Steuart, 1806; *The American Matron*. 1810; Jackson, 1812; Miller, 1814, and Logan, 1825. There were numerous contributions between the last-named date and 1848, when J. Forsyth Meigs published his important work on the "Diseases of Children," the last two editions of which appeared under the authorship of Meigs and Pepper. The next important name in pediatrics appeared ten years later, when Jacobi wrote his first paper on children. It is also notable that J. Lewis Smith wrote his first paper on children in the same year. The first edition of his well-known work on diseases of children appeared in 1869. The most important works that have since appeared on this subject are those of Keating, in 1889; Starr, in 1894; Sachs, 1895; Rotch, 1895, and Holt, 1896.

DR. JAMES C. WILSON read a paper on "Tic Convulsif," and reported a case which belonged to the class of nervous diseases which includes the "jumpers," described by Beard.

DR. B. SCHARLAU presented a synopsis of fifty-six cases of empyema operated upon during 1896 with very favorable results.

DR. W. D. BOOKER reported a case of congenital diaphragmatic hernia associated with recurrent attacks of asthma dyspepticum. During one of these attacks the child died, and the true pathologic conditions were revealed by the autopsy.

DR. J. P. CROZER GRIFFITH reported two cases of unilateral tremor in children.

DR. J. HENRY FRUITNIGHT read a paper on the "Frequent Significance of Epistaxis in Children."

He believed that this symptom was frequently the result of cardiac disease, and should always receive full attention.

DR. GEORGE N. ACKER reported two cases of meningitis, apparently tuberculous in nature, with recovery.

DR. JOSEPH O'DWYER reported a case of congenital stenosis of the larynx, in which relief was obtained by gradual dilatation with steel sounds.

DR. WILLIAM OSLER read an extended paper on "Adherent Pericardium in Children," and reported cases.

DR. A. JACOBI reported a case of sarcoma of the skin in a newly born infant, and read a paper on the origin of such growths.

DR. F. GORDON MORRILL reported an analysis of one hundred cases of frank pneumonia, that term being used rather than lobar pneumonia, because of the confusion caused by the use of the latter term when applied to the pneumonias of children.

DR. FLOYD M. CRANDALL read a paper on "Hereditary Tendency in Pediatric Practice," and called particular attention to certain misapprehensions which sometimes arise regarding that subject.

DR. B. K. RATCHFORD read a paper on the "Symptoms of Lithemia as they Appear in Children," and considered the special symptoms in detail.

In a paper on "Retro-esophageal Abscess," DR. J. P. CROZER GRIFFITH called particular attention to the great difficulties experienced in making a diagnosis of that condition.

DR. C. G. KERLEY reported a case of exophthalmic goiter apparently cured by the use of thyroid extract. The case was an undoubted one, and the beneficial effects of the extract seemed to be equally clear.

DR. HENRY KOPLIK reported the extensive use of thyroid extract for the purpose of testing its value in different diseases of the blood and bones, and his conclusions suggested its more general use in these diseases.

DR. FRANCIS HUBER also presented a paper reporting "A Cure of Goiter by Thyroid Extract."

The report of the Committee on

THE COLLECTIVE INVESTIGATION OF THE ANTITOXIN TREATMENT OF LARYNGEAL DIPHTHERIA IN PRIVATE PRACTICE

was read by the Chairman, DR. W. P. NORTHRUP, the conclusions being as follows: (1) The mortality of laryngeal diphtheria at present rests at 21.12 per cent.; (2) that sixty per cent., approximately, have not required intubation; (3) that the mortality of operated cases is at present 27.24 per cent.

DR. JOSEPH O'DWYER read an important paper on "Retained Intubation Tubes," this term being used to mean the necessity of continuing intubation long after the disappearance of the original disease.

DR. T. M. ROTCH reported cases of diphtheria of the eye and discussed the subject of antitoxin in diphtheria.

DR. HENRY KOPLIK exhibited an apparatus by which the bacteriologic diagnosis of diphtheria could be made within three or four hours.

DR. EDWARD P. DAVIS presented an important contribution on "Prenatal Infection in Infancy," causing diseases which develop during the first month of life.

DR. IRVING M. SNOW reported a case in which poisoning by acetanlid had resulted from the absorption of that drug in the umbilical wound.

DR. T. M. ROTCH presented a specimen of iliocolitis, and Dr. R. G. Freeman presented an improved nursing bottle.

Papers were read by title by Drs. J. Lewis Smith, W. F. Lockwood, W. P. Northrup, R. G. Freeman, H. D. Chapin, Francis Huber, C. G. Jennings, and C. P. Putnam.

The following officers were elected for the ensuing year: President, Dr. L, Emmett Holt; first vice-president, Dr. Henry Koplik ; second vice-president, Dr. Charles G. Jennings; secretary, Dr. Samuel S. Adams, recorder, Dr. Floyd M. Crandall; treasurer, Dr. F. A. Packard; member of Council, Dr. Charles P. Putnam.

The following were elected members: Dr. J. H. McCollom, Boston; Dr. J. P. West, Bellaire; Dr. Churchill, Chicago; Dr. E. E. Graham, Philadelphia; Dr. Harold Williams, Boston.

The subject of infantile scorbutus was selected for collective investigation, the report to be made at the next meeting. The following committee was appointed: Drs. W. D. Booker, J. P. Crozer Griffith, C. G. Jennings, A. Caillé, and J. Lovett Morse.

Cincinnati was named as the next place of meeting, the exact date of which was not decided.

AMERICAN OPHTHALMOLOGICAL SOCIETY.

Thirty-third Annual Meeting, Held at Washington, D. C., May 5 and 6, 1897.

First Day—May 5th.

The President, Dr. George C. Harlan of Philadelphia, in the Chair.

Dr. J. A. Spalding of Portland, Me., read a paper on

ENUCLEATION OF BOTH EYES, OWING TO PANOPHTHALMITIS, IN A CASE OF EXOPHTHALMIC GOITER.

Dr. W. F. Aiken of Savannah reported a case of exophthalmic goiter in which the eye first became prominent after etherization for a surgical operation. The case gradually improved for two years. Vision continued normal.

Dr. W. H. Wilder reported three cases of pulsating exophthalmus—the first his own, the second in the service of Dr. Ralph Isham, and the third Dr. Beard's case. His conclusion was that ligature of the common carotid gives the best result.

Dr. S. M. Burnett of Washington, D. C., reported a case of double exophthalmus, with destruction of eyes, in an infant, starting probably from the dura near the cella turcica, with exhibition of the specimen, which he considered a sarcoma strictly localized.

Dr. J. O. Tansley of New York spoke of having seen a number of cases of exophthalmus, and quoted briefly from two.

Dr. Lucien Howe of Buffalo, N. Y., exhibited a case of

CHRONIC PSEUDO-MEMBRANOUS CONJUNCTIVITIS,

and remarked upon its pathology and the difficulties in the way of treatment.

Dr. Myles Standish of Boston read a paper on

DIPHTHERITIC CONJUNCTIVITIS.

He had seen rapid and permanent benefit from injections of antitoxin, and believed it advisable to repeat the injection as often as necessary to keep up the improvement.

Drs. G. E. de Schweinitz of Philadelphia and John E. Weeks of New York spoke in confirmation of the conclusions of Dr. Standish.

Dr. Geo. C. Harlan reported a new operation for prothesis in cases of cicatricial orbit, showing photographs and specimens of lead wire and shell used in the procedure.

Dr. W. F. Norris of Philadelphia reported a case of ivory exostosis of the orbit, and Dr. Robert Sattler of Cincinnati presented a supplementary report of a case previously related to the Society.

Dr. Edward Jackson of Philadelphia reported a case of unique intra-ocular tumor, characterized by rapidity of onset, inability to close one eye without closing the other, and rapid loss of vision. Diagnosis before operation, sarcoma of choroid; after enucleation, tumor was found, partly of the consistence of bone.

Dr. W. B. Johnson of Paterson reported a case of angiosarcoma, of probably retinal orgin, with specimen mounted in gelatin, which Dr. Weeks thought should be called angioglioma.

Dr. William Thomson reported two cases—one of a foreign body in the lens, which was removed entire in its capsule, and the resulting vision was $\frac{20}{40}$; and after a blow on the eye, which reopened the wound, the final result was V-$\frac{1}{3}$. In the second case, the foreign body was located by means of radiographs and a system of triangulation, in a fibrous band extending forward from the retina; an opening was made and a piece of the band containing the encapsulated foreign body removed.

Dr. Wm. M. Sweet of Philadelphia demonstrated the method of triangulation used. Dr. C. A. Oliver demonstrated a method of triangulation, which he regarded as more practical than that of Exner.

The Society then went into executive session.

Second Day—May 6th.

The second session was opened at nine o'clock with the relation of

THE REMOVAL OF AN EPITHELIOMA OF THE LOWER LID,

by Dr. C. H. Williams of Chicago, Ill., the interesting feature being the production of anesthesia by cocain cataphoresis.

Dr. Robert Sattler related a case of congenital ptosis and epicanthus with operation and photographic exhibit, showing other members of the family affected.

Dr. W. H. Wilder reported a new operation for ptosis, stating the objections to the operation of Panas. His own operation consisted in a folding of the tarso-orbital fascia and getting a hold on the occipito-frontalis muscle, which leaves the orbicularis uninjured. Dr. C. A. Oliver reported two cases of resection and advancement of the levator-palpebræ muscle in traumatic ptosis, with blackboard demonstration.

Dr. G. M. Gould of Philadelphia, Pa., read a paper on the

LAW OF REFRACTION—CHANGE FOLLOWING INCREASE OR DECREASE IN BODY-WEIGHT.

(To appear shortly in the MEDICAL NEWS.)

DR. WILLIAM THOMSON exhibited an achromatic cataract lens, made by Bausch, with the main glass of crown glass, the added portion flint glass, with remarks upon its clearness of definition. DR. S. D. RISLEY of Philadelphia related two cases of saccharin diabetes, accompanied by refractive changes varying with the changes in the general condition of the patient. When the sugar disappeared the hypermetropia increased, and when it reappeared the hypermetropia diminished.

DR. E. FRIDENBERG of New York thought that the changes noticed by Dr. Risley were perhaps due to changes in the index of refraction of the media, and that the cases of Dr. Gould might be partially explained in the same way. DR. S. THEOBALD thought that perhaps some of Dr. Gould's cases might be explained by the measurements, possibly representing more than the true amount of myopia, and less than the true amount of astigmatism.

DR. GOULD, in closing the discussion, stated that in the cases quoted the ciliary muscle had been paralyzed by a mydriatic, but DR. THEOBALD thought that a mydriatic might not always entirely eliminate action of the ciliary muscles.

DR. R. L. RANDOLPH reported a second series of cataract extractions, numbering 147, of which in 107 an iridectomy was made, and 42 were simple extractions. He found the failures not due to prolapse, but to simple iritis, as in cases where iridectomy had been performed.

DR. O. F. WADSWORTH of Boston, Mass., reported

CASES OF INTRA-OCULAR HEMORRHAGE DURING AND FOLLOWING CATARACT EXTRACTION.

In the first case, after the section, a stream of blood flowed from behind and below the iris over the lens, followed by prolapse of iris, ending in atrophy of eyeball. Second case, section as usual with similar result, the blood forcing the corneal flap to fold over. In the third, a case of simple extraction, prolapse of iris occurred, followed by blood. Eye enucleated. This patient died of apoplexy a year later. In the fourth case, fifteen minutes after operation, there was prolapse of iris and vitreous. The fifth case was an American woman in good, general health and with good projection. After the removal of the lens, there was sudden pain, protrusion of vitreous, followed by blood.

DR. L. A. W. ALLEMAN of Brooklyn, N. Y., reported a case of cholesterin crystrals in the opaque lens of a child. The lens was needled, and as much as possible removed by suction.

DR. S. B. ST. JOHN of Hartford, Conn., wished to emphasize the practicability of cataract extraction without expert assistance. In doing iridectomy he put cocain into the anterior chamber and waited a minute or two, when the iris was cut with no pain.

DR. DAVID WEBSTER of New York reported a case of cataract extraction, with intra-ocular hemorrhage and protrusion of vitreous, retina, and he thought choroid. He enucleated the eye a few days later.

DR. S. O. RICHEY of Washington, D. C., read a short paper on

TAXIS IN INCREASED INTRA-OCULAR TENSION.

He referred to the position of the venæ vorticosæ in their passage through the sclera, and suggested the transfer of attention from the anterior to the posterior segment of the eyeball.

DR. G. E. DE SCHWEINITZ of Philadelphia, Pa., related a case of tobacco amblyopia, with autopsy and microscopic examination of the specimens, showing the nerve bundles affected, and DR. S. THEOBALD related a case of marked impairment of central vision following prolonged use of the affected eye in calibrating burettes, with paracentral scotoma. Treatment was pilocarpin, followed by mercuric biniodid, with a result of V-$\frac{20}{20}$.

DR. J. A. SPALDING of Portland, Me., reported a group of four cases of optic-nerve atrophy following sexual excess. The results were gradual loss of useful vision, though not total blindness. Two became victims of phthisis, the third was committed to an insane asylum, and the fourth committed suicide.

AMERICAN DERMATOLOGICAL ASSOCIATON.

Twenty-first Annual Meeting, Held at Washington, D. C., May 4, 5, and 6, 1897.

FIRST, SECOND, AND THIRD DAYS.

THE proceedings were opened with an address by the President, DR. JAMES C. WHITE of Boston. He reviewed the work of the Association in connection with the many advances in dermatology, and said that the amount of data gathered during the twenty-years' existence of the Association was of inestimable value. In addition to the numerous systems, treatises, atlases, etc., published by the members, 327 papers of value had been contributed to the Association, and the journal devoted to this special branch had reflected great credit upon its various editors. American dermatologists might well feel a sense of satisfaction in the part they had taken in separating and classifying various confused groups of disease, and the future of the Association seemed very bright.

A CONTRIBUTION TO THE STUDY OF BLEEDING STIGMATA

was the title of a paper presented by DR. J. N. HYDE of Chicago.

A peculiar and seemingly unique instance of spontaneous bleeding from the skin was related as having occurred in a male subject. In spite of his residence in a healthy, non-malarial district, the plasmoidium was repeatedly discovered in the blood, though neither the spleen or liver was enlarged. The bleeding was from a single point at a time, and continued as long as six months during one attack. There was no hemorrhage from any mucous membrane.

HYSTERICAL DERMATONEUROSES

was the title of the next paper, which was read by DR. VAN HARLINGEN of Philadelphia. Four cases of his own were reported, and three occurring in the practice of others were mentioned. They all concerned young girls, some of whom were hysterical, and for the most part anemic. In one woman crops of bullous lesions were present, which continued over a period of two years. In one young girl three attacks followed her being sent to school against her will, and a fourth was called forth by the mere mention of school. They subsided upon the patient being kept at home. The speaker thought all these reported instances were due to a definite process, and that we are warranted in supposing an internal cause of the malady to be present. The title "neurotic excoriation" was not sufficiently exact to be retained; hysteria was looked upon as the condition upon which the cutaneous lesions depended.

Many lesions undoubtedly appear as though self-inflicted, although the term "feigned" cannot apply to them.

LINEAR NEVUS

was discussed from the standpoint of etiology and pathology by Dr. P. A. Morrow of New York. Of the many names proposed for this affection, he had chosen the one he thought best suited for it. He would drop the qualitative term neuropathic as unwarranted. He reported two instances, one affecting the side of the neck and back in a young woman, the other running down the arm and over the palm to the tip of one of the fingers in a man. He thought there were diverse clinical varieties of this wart-like nevus, and that while not strictly limited to one side of the body, nor to any particular nerve distribution, the affection bears a close analogy to zoster, which is now known to be of nerve origin.

The histologic examination of his cases had shown the changes habitually noted in this affection. Both instances reported had developed long after childhood, and had existed twelve and seven years, respectively.

THE VARIOUS FORMS OF PITYRIASIS AND THEIR RELATION TO ERYTHEMA, ECZEMA, AND PSORIASIS

was the title of a paper by Dr. George H. Fox of New York. The contention was made that seborrhea, as such, had no place in modern nomenclature; that the pityriasis group includes, or should include, many scaly or oily affections known under various other names. It was thought that some simple term to correspond to "acne" "eczema," and "psoriasis" would do away with much present confusion. The term pityriasis, he thought, would cover many conditions of skin lesion now grouped elsewhere, and to illustrate this point a series of prints were exhibited showing the great resemblance between them, as well as between this whole class of affections and psoriasis. Pityriasis rosa had been included by Dr. Fox in the scaly affections which he would class together. This had given rise to almost unanimous opposition, since it was claimed that this affection stands out by itself with distinctive features, and can be readily diagnosticated at a glance in almost every instance.

It was admitted that many clinical symptoms seem to merge and confuse, but efforts should be directed toward differentiation of similar, but still distinct, diseases, instead of taking a step backward, as it would seem to be, in grouping them together. One point made was that seborrheal affections are persistent, while pityriasis rosa is evanescent.

Dr. Duhring said he recognized several of this class of affections as distinct. There was (1) pityriasis rosa, of which there may be an acute and a chronic form, the latter lasting as long as a year. These may or may not recur. (2) Seborrhea, which may attack any region of the body. (3) An eczema, which may be complicated by seborrhea, and for which the term "eczema seborrhoicum" may be retained. Other diseases may simulate these. The term pityriasis, as proposed by Dr. Fox, must be more clearly defined before it can be accepted to cover the group of affections as proposed.

Dr. H. G. Klotz read a paper, entitled

STRONG APPLICATIONS OF THE ICHTHYOL GROUP.

He found that in acute inflammatory states, as well as in more chronic processes, a judicious use of strong solutions is often of much benefit. Stress was laid upon the contracting power over the vessels exerted by ichthyol, especially in erysipelas. To this, no less than to the antiseptic qualities of the drug, is due its favorable action. It is very useful in ivy poisoning, dermatitis, and a variety of other acute inflammations, including the dermatitis caused by burns, freezing, scratching; in intertrigo eczema, zoster, and the erythemata. In chronic processes and inflammations the effects are still more marked. It is usually not necessary to combine any varnish or collodion with the drug, since it forms in itself a sufficient protective.

A paper, entitled

A CONTRIBUTION TO THE ETIOLOGY OF CONGENITAL ICHTHYOSIS, WITH ABSENCE OF THE THYROID,

was read by Dr. James M. Winfield.

After giving the family history, the paper entered into the history of the mother. She had been pregnant seven times, four children being normal and two ichthyotic. During the first, second, third, fourth, and sixth pregnancies the mother's condition was excellent. During the fifth, which resulted in the first ichthyotic infant, she was subjected to considerable anxiety, and at the sixth month received a severe nervous shock. When she became pregnant for the last time, she immediately grew exceedingly nervous and worried lest she should become the mother of another deformed baby. At delivery the infant weighed four pounds. The body was enveloped in what appeared to be a thick coating of vernix caseosa, which, on removal, left the skin red and shiny. If no lubricating protective was used, the whole cutaneous surface soon became scaly and fissured. Four days after delivery the infant appeared as follows: The whole body was covered with thick, reddish-brown, epidermic plates, which were larger and more marked over the extensor surfaces; some of them were from a sixteenth to a tenth of an inch in thickness, and a half to two inches in diameter. Between the plates were fissures of varying depths. Movement of the limbs produced cracks about the flexures of the joints, which extended deeply into the underlying tissues.

The autopsy was made about eight hours after death.

The body was considerably emaciated and covered with large, fatty, epidermic scales. On examining the neck, the thyroid gland was found to be absent. There was no sign or trace of its ever having existed.

The important etiological points are: (1) the absence of the thyroid gland; (2) the presence of micro-organisms in and about the lymph spaces.

Just what etiological bearing the absence of the thyroid has on the production of ichthyosis congenita and kindred diseases cannot be positively stated without further clinical and *post-mortem* study. Still, from the above facts, it is but fair to conclude that, in this case at least, the absence of this gland had some marked effect on the nutrition of the skin and the development of the cutaneous affection.

The occurrence of micro-organisms in the lymph spaces at once brings up the question whether this and similar cases are types of true ichthyosis or, as Dr. Van Cott puts it, a variety of dematitis.

If these micro-organisms were the cause of this excessive plate formation, it is possible that the term ichthyosis sebaceæ is the correct one, for a bacterial irritation could easily produce a universal seborrhea.

HEREDITARY AND CONTINUOUS SHEDDING OF THE FINGER-NAILS

was the title of a paper presented by DR. D. W. MONTGOMERY of San Francisco.

A case was described in which, without evidence of disease of the nail itself, this appendage was thrown off at longer or shorter intervals during the subject's whole life. His mother and an uncle on her side had been similarly affected. The nail began to loosen in the region of the matrix, the loosening process gradually extending forward toward the free border. Corresponding nails upon the opposite side would be simultaneously affected, and after an interval the remaining nails would follow in the same manner. It was the only case in literature, so far as the reader knew, where such continuous loss of nails had occurred.

SYMMETRICAL ATROPHY OF THE SKIN; REPORT OF A CASE, WITH COLORED DRAWINGS AND PHOTO-MICROGRAPHS.

DR. J. A. FORDYCE of New York City reported such a case which occurred in a woman aged forty years. The hands, elbows, knees, and ankles were the seat of atrophic lesions, which were surrounded by a dusky red zone of dilated capillaries. The atrophy followed closely on the hyperemia, which seemed to be the primary condition. Clinically, the affection resembled the cases described by Buchwald, Pospelow, Touton, Bronson, and others. The eruption was absolutely symmetrical and had, up to a short time before, been progressive. On microscopic examination, the atrophy was found to be secondary to an inflammation which was located in the skin and underlying connective tissue. The epidermis was invaded by exudation corpuscles, which had produced a thinning and degeneration of the constituent cells. No organic affection of the nervous system could be detected, although there was evidence of vasomotor disturbance.

A PECULIAR AFFECTION OF THE HAIR-FOLLICLE

was the title of a paper read by DR. JOSEPH GRINDON of St. Louis.

The affection consists of a chronic inflammation of the hair-follicle, characterized by extrusion of a portion of the root sheath proper *en masse*, which remains threaded over the hair and is carried up with it in its growth, the process being repeated from time to time until successive masses bearing a superficial resemblance to nits are strung along the hair. It is accompanied by slight redness about the mouth of the follicle, and results in a curable alopecia.

There are found little grayish-white masses threaded beadwise on the hair. In their size, color, and distribution they are so like the ova of the pediculous capitis that one is almost certain to mistake them for the latter at first sight.

The little masses consist of the cells of both layers of the internal root sheath surrounded by a layer of amorphous detritus and sebum.

DR. ALLEN presented

A SCALE OF MEASUREMENTS FOR THE ACCURATE AND UNIFORM DESCRIPTION OF CUTANEOUS LESIONS, OF UNIVERSAL ADAPTABILITY.

He thought the desirability of a uniform system of description which might be followed by dermatologists in all countries need not be dwelt upon.

The unit upon which this scale is drawn is one-quarter of a millimeter. Five hundred is the largest size shown on the scale, but larger plaques, tumors, etc., may be readily described in multiples of this diameter. The scale numbers can be reduced to millimeters if desired by dividing by four. Thus, No. 40 is ten millimeters, or one centimeter in diameter. The term *tetmil* is proposed to designate the unit. It is especially in the smaller sizes that accuracy is often of the utmost importance in describing the primary lesions of a disease.

The method now employed to denote the relative size of lesions is too inaccurate, unsatisfactory, and unscientific. After discussion, it was voted to refer the subject to the committee on nomenclature. It was also decided that the Association should present a scheme such as that proposed at the coming International Dermatological Congress.

The meeting then adjourned to meet in or near New York City on the first Tuesday in June, 1898.

The officers elected for the ensuing year were: J. N. Hyde of Chicago, president; E. B. Bronson of New York, vice-president; J. T. Bowen of Boston, secretary.

AMERICAN OTOLOGICAL SOCIETY.

Thirtieth Annual Meeting, Held at Washington, D. C., May 4, 1897.

The President, DR. ARTHUR MATHEWSON of Brooklyn, in the Chair.

AFTER the disposal of the usual executive business DR. A. H. BUCK of New York opened the scientific proceedings by reading a paper on

GOUTINESS IN ITS RELATIONS TO DISEASES OF THE EAR.

After directing attention to the absence of references in literature to this subject, Dr. Buck expressed the opinion that gout would be found to be a more considerable factor in a certain class of affections of the ear, than had hitherto been suspected. He spoke of the ease with which spontaneous stagnation of the blood current could occur in parts of the auditory apparatus, as favorable to the interference of uric-acid irritation, and illustrated the subject by the introduction of the history of several cases calculated to show the vicious circle which can only be broken by measures addressed to the general condition. The paper received marked attention, and the discussion brought out only one or two differences of opinion on minor details.

DR. E. B. DENCH'S paper on

THE DIFFERENTIAL DIAGNOSIS BETWEEN DISEASES OF THE SOUND-CONDUCTING AND SOUND-PERCEIVING APPARATUS,

stated that physical inspection of the ear cannot be relied upon to show the state of the hearing. He divided the affections of the hearing into two parts, those dependent upon interference (1) with the conducting and (2) with the perceiving apparatus. Quantitative audition is determined by noises, while qualitative audition is measured by musical tones. A description of the results obtained by the use of the tuning forks was followed by the statement that in disease of the conducting apparatus the lower tones are always lost first, while in affections of the sound-perceiving apparatus the lower tones are not lost. In conducting defect the high tones are good whereas in perceptive difficulty they are lost. An explanation of the reason why this should be so followed. In disease of the sound-conducting apparatus bone conduction is always exaggerated, but in mixed cases where the impairment is extreme air conduction is better than bone except for the very lowest notes.

The discussion of the paper was participated in by DRS. S. THEOBALD of Baltimore and H. A. ALDERTON of Brooklyn who had been puzzled by the varying results obtained with the tuning forks on the vertex and on the mastoid ; and by DR. CLARENCE J. BLAKE of Boston, who explained that the variations complained of were doubtless due to varying thicknesses of the skull at different points even in the same subject.

DR. W. P. EAGLETON of Newark read a short paper on

EAR COMPLICATIONS OF INFLUENZA,

and gave statistics showing the relative virulency. This was followed by one by DR. GORHAM BACON of New York on

IMPORTANT SYMPTOMS INDICATING OPERATION IN MASTOID DISEASE.

He had never seen a case without some elevation of temperature, but the temperature may range lower in adults than in children. High temperature is not necessarily indicative of extensive disease. In determining tenderness, pressure should always be made over the fellow mastoid for comparison. Redness and edema over the mastoid are not so necessary and not to be waited for. Bulging of Shrapnell's membrane is always an indication for opening the mastoid cells. Sometimes the temperature remains high after operation.

DRS. W. B. JOHNSON of Paterson, DENCH and J. O. TANSLEY of New York participated in the discussion which followed. The opinion was advanced that the continued high temperature after operation may be due to infection of the newly incised and exposed surfaces ; differences of opinion developed as to whether inflation after incision of the membrane in acute cases was dangerous or the reverse. Dr. Bacon only politzerizes when the inflammation has practically subsided and there is a free opening in the membrane.

DR. H. A. ALDERTON of Brooklyn, in a paper on

A CASE OF THROMBOSIS OF THE LATERAL SINUS,

accompanied by a specimen, raised the question as to the advisability of ligating the jugular to prevent extension of the septic condition. One point of interest in the case reported is that the sinus was in front of the antrum, and when evacuated of débris temporary improvement occurred, but a day later metastatic pneumonia set in with death four or five days later.

DRS. DENCH and BACON did not think it always necessary or advisable to ligate the jugular vein, and thought that in many cases the extension of the sepsis was arrested as soon as the septic material and thrombus was removed.

DR. GORHAM BACON related the details of a case of extreme deafness in which great improvement of hearing followed the use of pilocarpin hypodermatically, and expressed the opinion that the want of success in many cases may be due to the shortness of the period of treatment.

DR. TANSLEY suggested that the length of treatment was an obstacle in some cases, and thought as good results had been achieved when administered by the mouth. Other speakers concurred with Dr. Bacon in thinking that pilocarpin by the stomach had not shown anything like the happy results obtained hypodermatically.

DR. J. OSCROFT TANSLEY described

A NEW OPERATION FOR DEVIATED SEPTUM,

which consisted in converting the septum into a spur by folding it upon itself, then at a second sitting ten days later removing the spur.

DR. ROBERT C. MYLES of New York read a short paper on

CICATRICIAL BANDS IN THE NEIGHBORHOOD OF THE FOSSA OF ROSENMULLER, SIMULATING STENOSIS OF THE EUSTACHIAN TUBE,

which he had found easy to remedy by breaking up the bands with the finger, resulting in immediate improvement in hearing.

DR. J. E. H. NICHOLS exhibited an electric speculum with head band, operated by storage battery, which gave perfect light to the ear and left both hands free for manipulations.

REVIEWS.

A SYSTEM OF PRACTICAL MEDICINE. By American authors. Edited by ALFRED LEE LOOMIS, M.D., LL.D., late Professor of Pathology and Practical Medicine in the New York University, and WILLIAM GILMAN THOMPSON, M.D., Professor of Materia Medica, Therapeutics, and Clinical Medicine in the New York University; Physician to the Presbyterian and Bellevue Hospitals, New York. Volume I. *Infectious Diseases.* New York and Philadelphia: Lea Brothers & Co., 1897.

IT is unfortunate that the late Dr. Loomis could not live to see the publication of this work on which he had long been engaged and which, in many respects, will form one of the best systems of medicine published in this country. There certainly must be an active demand for collaborative works of this nature, for the last two years has seen the appearance of several systems devoted to internal medicine. It is not saying too much to express the belief that the one under consideration will at once assume a rank at once gratifying to the publishers and the authors.

The present volume on the infectious diseases is scientific, complete, and direct. The articles do not possess, however, a character so deep, no reasoning so abstruse, that their reading is burdensome. All of the chapters are written by men whose verdicts are regarded as authoritative, and their dicta may, therefore, be accepted as conclusive. It is of great value, too, to know that statements are made with some show of authority, and that they are based upon actual knowledge and experience rather than upon a collection of facts from literature with a verdict wavering with each author cited.

It is almost impossible to review critically each of the articles in this volume. Every chapter contains an historical account of the disease with which it deals, followed by the etiology, the morbid anatomy, the differential diagnosis, diagnosis, complications, the prognosis, and the treatment. The practical value of the work is much enhanced by the attention given to the consideration of the diagnosis, differential diagnosis, and treatment, Thus twenty-four pages are devoted to the treatment of typhoid fever, and twenty-eight to the treatment of diphtheria, including an exhaustive account of the antitoxin results. The author, by the way, praises the use of the antitoxin serum.

All of the chapters, it has been said, have been written by most competent observers. It would, therefore, be unjust to institute comparisons. Yet the chapters on malaria, yellow fever, typhoid fever, tuberculosis, and erysipelas seem to us to be particularly well conceived. Unless it be Monnaberg's or Thayer and Hewetson's monograph, we know of no clearer, more complete, and more logical exposition of the subject of malaria than is contained in this volume. Although the articles mentioned seem to bear the stamp of authority perhaps more markedly than some of the others, the implication of inferiority is by no means intended. The volume stands as a model of literary and scientific excellence, and we expect, therefore, to see it occupy the prominence it deserves among the books of the year. It is reasonable to infer that the succeeding volumes will have as high a standard.

The proof-reading and editing are above reproach. The book is handsomely printed on heavy paper, is splendidly illustrated, and is excellent in the style and color of its binding.

THE YEAR-BOOK OF TREATMENT FOR 1897: A Critical Review for Practitioners of Medicine and Surgery. Philadelphia and New York: Lea Brothers & Co., 1897.

THIS year-book is so widely known as to require merely the announcement of its publication for the current year. Its twenty-six contributors are mainly specialists whose critical examination of the literature of the past year makes the work of the greatest value to one whose desire is to keep abreast of what is being accomplished in the ever-widening fields of medicine. All the advances made in the last year in the provinces of medicine and surgery are here faithfully recorded and reviewed by critical experts, and the present volume will, we are sure, reach the same measure of success as its predecessors.

A PRACTICAL TREATISE ON DISEASES OF THE SKIN. For the use of Students and Practitioners. By J. NEVINS HYDE, A.M., M.D., Professor of Dermatology and Venereal Diseases in Rush Medical College, Chicago, and FRANK H. MONTGOMERY, M.D., Lecturer on Dermatology and Venereal Diseases, Rush Medical College, Chicago. New (fourth) edition. In one octavo volume of 815 pages, with 110 engravings and 12 full-page plates, 4 of which are colored. Cloth, $5.25; leather, $6.25. Philadelphia and New York: Lea Brothers & Co., Publishers.

"GOOD wine needs no bush"; no more does a book in its fourth edition need the commendation of the reviewer, for the great public has already passed its verdict. In the present instance the author and his publishers deserve congratulations upon the success achieved, for the work of both has been most excellently done and is in every way reliable and satisfactory.

The new chapters contained in this fourth edition are a valuable addition, and not a few of those with which we were familiar have been entirely rewritten and brought up to date. Among the former are included chapters on Conglomerate Pustular Perifolliculitis, Dermatitis, Seborrhoicum, Epidermolysis Bullosa Hereditaria, Erysipeloid, Erythema Induratum, Hidradenitis Suppurativa, Hydrocystoma, and Lichenification, but we have failed to find mention made of Baelzer's Disease, Cheilitis, Glandularis, or Porokeratosis. Several new plates and wood-cuts have been added. We note also that the simplified system of spelling has been adopted, as in nevus, hyperesthesia, myxedema, and the like, but the convictions of the orthographer have not given him courage to follow the same plan with reference to edema.

As has been said, the book is thoroughly deserving of its success, and there can be no doubt that it will pass through many succeeding editions.

A MANUAL OF VENEREAL DISEASES. By JAMES R. HAYDEN, M.D., Chief of Venereal Clinic at the College of Physicians and Surgeons (Columbia University), New York. Philadelphia and New York: Lea Bros. & Co., 1896.

THIS little manual is an excellent practical exposition of treatment, and is designed especially for students of Venereal Diseases. There is happily in this book none of the exploitation of useless and dangerous fads in the abortion of and treatment of gonorrhea with which we are often bored. Brought up in a conservative school, Dr. Hayden's teachings are judicious and conservative. In a short space much good information is conveyed as to the treatment of all of the manifestations and sequelæ of gonorrhea.

The subject of chancroid is well handled in every particular, and the description of syphilis is concise and graphic. While more works of this character are abortive and unsatisfactory, this one is sound in doctrine and practice and quite full of good therapeutic suggestions.

CLINICAL LECTURES ON MENTAL DISEASES. By THOMAS S. CLOUSTON, M.D., F.R.C.P.E., Lecturer on Mental Diseases in the University of Edinburgh. Fourth Edition, thoroughly revised; fifteen full-page plates. With Folsom's Laws of the United States on the Custody of the Insane. New York and Philadelphia: Lea Brothers & Co., 1897.

PERHAPS no work on mental diseases by any English author has heen so popular as that of Clouston. This popularity is certainly deserved, for the author has put into a colloquial form all the important data relating to the diagnosis, care, and treatment of the various forms of mental disease. The work is avowedly intended as an aid to teaching the fundamental and essential features of insanity. No plan perhaps could have been better devised than the one used by the author for this purpose.

With the greater activity in all pursuits, with the greater keenness of competition in the struggle for life, with the greater segregation of people in the cities, with the increased demands on mental work, in fact with the evolution of civilization, the weaker minds, those unable to stand the strain imposed, are the first to suffer. Insanity is hence on the increase and especially so in the large cities, where all these factors are more extensively at work.

It is the general practitioner whose counsel is first invoked when cases of mental disturbance occur. He should be qualified to detect insanity when it manifests itself, for much of the subsequent result of the case will depend on whether the mental disease has been recognized early. To the general practitioner this work must appeal. For the general features of each form of mental disease are so succinctly given, the clinical picture so adequately and graphically described, that they require no study to impress them on the memory. Clouston certainly deserves the thanks of the profession for this, if for no other reason, that he has removed from the study of mental disease much of the admixture of excessive metaphysical psycology which formerly burdened English psychiatrical science which made the study of psychiatry so distasteful to the general practitioner. He has given to the profession at large a work which is easily understood and which adequately details all the knowledge which a physician need have to qualify him to speak authoritatively on any case which might arise in his professional work.

The method of presenting the various types of insanity adopted by Dr. Clouston is very felicitous. He has utilized the form of lectures, arranging each on a systematic plan. He introduces each by a careful résumé of the subject therein contained. He then goes into the description and clinical features and concludes with a discussion of the prognosis and of the treatment.

The book contains many histories of cases explanatory of the various forms described, making not only very interesting reading, but presenting instructive object lessons.

The work of the publishers is above reproach.

THE TONIC TREATMENT OF SYPHILIS. By E. L. KEYES, A.M., M.D., New York: D. Appleton & Co., 1896.

THIS brochure of seventy-five pages is in no sense a thorough revision of its predecessor of more than twenty years ago, nor can it under any circumstances be considered an up-to-date exposition of the treatment of syphilis, It is simply a repetition of the author's views which have not been accepted by any distinguished syphilographer, nor strange to say, have they been at all changed or modified in all these years although so much of real value has been added to our stock of knowledge on this subject.

MITTEILUNGEN AUS DEN GRENZGEBIETEN DER MEDIZIN UND CHIRURGIE. Erster Band; Drittes Heft. Jena: Gustav Fischer, 1896.

THIS volume bears out the general high standard offered thus far by the editor. Among the articles is one by D. V. Bandler, showing that chloroform produces fatty degeneration of the liver, while ether does not. Von Jacksh states as his opinion that the treatment of malignant tumors by erysipelas serum (Emmerich-Scholl) is dangerous and useless. The remaining articles deal mainly with surgical topics of less interest to the general reader.

THE RETROSPECT OF MEDICINE. Edited by JAMES BRAITHWAITE, M.D., assisted by E. F. TREVELYAN, M.D., B.Sc., M.R.C.P., Vol. 114, July–December, 1896. London: Simpkin, Marshall, Hamilton, Kent & Co., Limited, 1897.

IT is needless to do more than merely call attention to this volume of Braithwaite's Retrospect, the standard work of its kind, which is found in the libraries of medical men the world over. The classification of subjects is the one usually followed in this work, and contains a review of the main contributions to medical literature during the last six months.

THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

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ORIGINAL ARTICLES.

SEMICENTENNIAL OF THE AMERICAN MEDICAL ASSOCIATION, PHILADELPHIA, JUNE 1-4, 1897.

THE PRESIDENT'S ADDRESS.[1]

BY NICHOLAS SENN, M.D.,
OF CHICAGO.

THE American Medical Association was born at the dawn of a great era in the history of medicine. Only a few years before its organization was effected, anesthesia, which has robbed the operating-room of its greatest terrors, came into general use, and at once opened up new fields of usefulness for the surgeon. The new science of bacteriology upon which is based our modern views regarding the etiology and prevention of disease has been founded and firmly established since that time. The principles which govern the present treatment of wounds, conceived by the immortal Lister and developed to the existing state of perfection by a host of his enthusiastic followers, have revolutionized the practice of surgery during the last quarter of a century. Normal and pathologic microscopic anatomy are recent acquisitions to our knowledge of living tissues in health and disease. Aseptic midwifery is the direct descendant of aseptic surgery, and has secured for the lying-in woman the same protection against puerperal complications as the employment of aseptic precautions will largely prevent the occurrence of suppuration, sepsis, and pyemia in the treatment of the injured and patients requiring operative treatment. Anesthesia and asepsis have created visceral surgery.

Our knowledge of chemistry and physiology has been vastly increased during the last fifty years by thousands of earnest and devoted students in possession of improved instruments and apparatus for accurate investigations. During the same time great strides have been made in the practice of medicine and the preparation and methods of administration of drugs. In the light of many of these recent advances we have at least learned that disease is influenced for the better by aiding and assisting rather than by combating and opposing Nature's resources. Transillumination of the body by the wonderful Röntgen ray is the last and most important addition to our diagnostic resources in medicine and surgery. In these events which have startled the medical world in such rapid succession during the last half of the century many members of our Association, dead and living, have taken a prominent and often leading part. In looking about for an appropriate subject for my address at this meeting I have deemed it expedient to utilize my time and this unusual opportunity in discussing as briefly as possible

THE AMERICAN MEDICAL ASSOCIATION, ITS PAST, PRESENT, AND FUTURE.

This is a day of rejoicing to the medical profession of the United States. We celebrate to-day the semicentennial, the Golden Jubilee, of the American Medical Association. It is appropriate that you should have selected Philadelphia as the place of meeting at this time; it was here that the organization of our Association was completed half a century ago. Philadelphia is near and dear to every American citizen, as it is the birthplace of the greatest and most prosperous nation in the world.

It is here that on July 4, 1776, the most precious document in the possession of the American people—the Declaration of Independence—was signed, read and approved by the representatives of a people who craved for freedom, liberty, and independence. It was here that the sweet music of the Liberty Bell was first heard, the reverberations of which reached from the Atlantic to the Pacific, and from the Great Lakes to the Gulf of Mexico, and which has continued and will continue to echo and re-echo over our vast and free country for all time to come. It is a source of congratulation to every and all honest and progressive practitioners of medicine that this document, which was the means of planting a free government upon the virgin American soil and creating a new nation, was signed and heroically defended by America's great physician, Benjamin Rush.

The bloody struggle for independence culminated in the foundation of the great Republic of the United States, which in time gave the medical men an opportunity to establish American medicine upon a free American soil. It is not surprising that the organization of the profession, the establishment of institutions of learning and the foundation of American medical literature met with many difficulties which it required years to overcome.

Most of those who were helpful in laying the corner-stone of this great national institution have gone to their reward; few are left to tell the tale of the early struggles, frequent disappointments, and final triumph. Of those who have been permitted to witness the celebration of the semicentennial, these names are familiar to you all, Nathan S. Davids of Chicago, Alfred Stille of Philadelphia, J. B. Johnson of St. Louis, and D. F. Atwater of Massachusetts.

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[1] Abstract.

The founders of the American Medical Association were deeply impressed with the dignity and responsibility of our profession; they had for their object a higher standard of medical education, a more general diffusion of medical knowledge, and the creation of a respectable American literature. The idea of organizing a national medical convention originated in the New York State Medical Society and was discussed for the first time at the meeting in 1844. At that time quackery in its worst forms prevailed; the services of the honest physician were undervalued, and his standing in the community compromised on all sides by his less conscientious competitors with and without diploma.

Although the idea of a national convention arose in the New York State Medical Society, the most violent opposition to the organization of the American Medical Association came from New York State.

A meeting was held in Philadelphia, May 5, 1847, in which the organization of the Association was completed. It was attended by two hundred and fifty delegates. The annual meetings were held with regularity and with increasing attendance until the great War of the Rebellion drew a line between the North and the South, which temporarily parted the profession. No armies ever enjoyed to a greater extent the blessings of military surgery than did those of the North and South. The work done by the medical officers on both sides will always occupy an honorable position in the annals of military surgery. The war interrupted the meetings of the American Medical Association, but they again resumed their annual course at Boston in May, 1865. This meeting was attended by two hundred delegates. The only thing which savored of war and which showed the intense excitement which still prevailed, and which caused a serious discord was the expulsion from the Association without trial of Dr. Montrose Pallen, an alleged sympathizer with the South, who then resided in Canada. Dr. Pallen was most unreasonably charged with the heinous crime of introducing smallpox among the people of the North and East. In spite of earnest protests by a number of the cool-headed delegates, he was expelled without trial. It is to the credit of the Association that Dr. Pallen was exonerated and reinstated at the next meeting, which was held at Baltimore in 1866.

After the close of the war, the delegates from the South at once resumed their attendance; the most cordial relations were restored, and many of the largest and best meetings have taken place in the Southern cities.

The influence of the Association has been markedly felt in improving the standard of medical education. Nearly all our medical schools, large and small, now require four-years' attendance of eight months each upon a systematic graded course and, with few exceptions, furnish adequate laboratory and clinical facilities. There is no longer excuse for our medical students to seek foreign universities to obtain a thorough medical education. It requires no stretch of the imagination to predict with certainty that our country will become the center of medical education within twenty-five years, and our medical institutions will be sought by foreign students, as they will in the course of that time furnish facilities for teaching far in advance of those of any other country. Our medical schools are undergoing a rapid evolution by acquiring unlimited financial resources and by the development of model, practical, clinical teachers.

The polyclinics and the post-graduate medical schools, which have recently appeared upon the field of medical instruction and which had their origin in this country, have done good work in furthering the objects and directing the ambitions of the progressive practitioners, old and young. They never have and they never will take the place of medical societies as post-graduate institutions for the enlightenment and advancement of the great mass of practitioners. Medical societies, large and small, are the legitimate and the proper post-graduate medical schools.

Every medical society contains more or less of that morbid material, known as the "political doctor." These men appear more for the purpose of being seen and heard than to promote the legitimate work of the society. They seldom read papers or take part in the discussion of scientific subjects. They know something about parliamentary law, and are anxious that their more timid and less-informed colleagues should know it. This is an unfortunate element in any medical society. Another feature of medical society meetings that demands criticism is the stating offhand of favorable statistics. A sense of honesty should compel participants in any discussion to report their unfortunate as well as their favorable cases, and to record their mistakes as well as their successes. Embellished, painted statistics, too prevalent at this time from ambitious operators, are dangerous traps, and should be scrupulously excluded from the current medical literature. Honesty in medicine, as elsewhere, is always the best policy, and will be amply rewarded at the proper time. Clinical reports are valuable when properly made, harmful and misleading when based on superficial observation and written from memory instead of from an accurately kept case-book.

Prize essays of the American Medical Association have taken a high place in American medical literature, and it must appear plain to everyone that the practice should be resuscitated.

One of the potent agencies in the hands of the members of this Association to place American medical literature upon a sound basis is our official organ, the *Journal of the American Medical Association.* It should be and has already become the mouthpiece of the American medical profession.

One of the present needs of the Association is a permanent home, with an editorial office and a press-room for its official organ, a hall for the meetings at least every three years, a library room for American medical literature, and a memorial home, for paintings, busts of distinguished members of the Association, and a room for a collection of surgical instruments and indigenous medical plants. The present financial status of the Association justifies the taking of the necessary steps to bring such a project into effect at an early date. Such a modern Æsculapian temple would soon become the Mecca of those in search of American medical literature, and a rich storehouse for everything pertaining to the medical history of this country.

Our organization is now complete and in excellent working order. We can devote in the future all of our time to practical scientific work. It is difficult to foretell the possibilities of the second half of the first century of the existence of the Association. It is, however, safe to predict that when the first centennial celebration will be held in this city, fifty years from now, the membership will have increased to seventy-five or one hundred thousand, but the literature of to-day will then be as old and useless as that of fifty years ago. We are now laying the cornerstone and are slowly but surely building the foundation for rational medicine and surgery, and the work of the next fifty years will no doubt contribute still more toward making medicine and surgery exact sciences.

A Mighty Protagonist for Woman's Rights.—In conferring recently upon Fräulein Gabriele von Possanner who received the first doctor's degree ever given by the University of Vienna to a woman, the rector congratulated the candidate in highly complimentary terms, greeting her as a "mighty protagonist for woman's rights," who, "by her great energy and intelligence, has victoriously overcome the manifold obstacles in her way."

SURGERY.[1]

By W. W. KEEN, M.D.,
OF PHILADELPHIA;
PROFESSOR OF THE PRINCIPLES OF SURGERY AND OF CLINICAL SURGERY IN THE JEFFERSON MEDICAL COLLEGE.

As we celebrate on this occasion the semicentennial of the organization of the American Medical Association in this city in 1847, it is very natural and proper that the Address on Surgery should be a review of the work done in the last fifty years, and by contrasting the state of surgery and of surgical teaching in 1847 with that which exists in 1897 to see what progress has been made. The time also is opportune. Last year was celebrated the Centennial of Vaccination and the Semicentennial of the First Public Administration of Ether. Sydney Smith's bitter query in 1820: "In the four quarters of the globe, who reads an American book . . . . what does the world yet owe to American physicians or surgeons?" was answered a quarter of a century later and made all these "four quarters of the globe" our grateful and everlasting debtors. The discovery of an American dentist; first used by an American surgeon; christened by an American physician and *litterateur,* its recent celebration awakened throughout the world the interest, not only of the profession, but also of the entire public; and the strains of our still living poet, novelist, physiologist, and, as we all best love to know him, neurologist, Dr. S. Weir Mitchell—*nihil tetigit quod non ornavit*—as he sung of the "Birth and Death of Pain," have scarce died away before we begin anew our round of celebrations in the anniversary of this now almost venerable "Association."

A most important factor in the improvement, not only in surgery, but in all departments of medicine, has been the immense advance made in medical teaching. If the teachers of fifty years ago were to revisit the scenes of their early labors they would scarcely recognize the medical colleges in which, in their day and generation and with the meager appliances than at their command, they did what we must still recognize as yeoman's work in education. Apparently at that time the entire instruction consisted in lectures, text-books being not even advised. In reply to a letter addressed to the Deans of the Jefferson Medical College, the University of Pennsylvania, Harvard University, and the Medical Department of Columbia University, I am told that no list of text-books whatever appears on the catalogue of fifty years ago.

The course of didactic lectures then began on the second Monday of October and ended soon after the middle of February, and if we take out the holidays and remember that not a few made up for coming late by leaving early, it was quite a possibility for a man to receive his authorization to practice, after practically only two sessions of three months each! The examination was a farce and the diploma a falsehood. Even so late as 1860, when I began the study of medicine, there were no laboratories, except that of anatomy—the dissecting room. I doubt if of the two hundred and odd men who graduated with me in 1862 ten per cent. had ever looked through a microscope or handled a test-tube, palpated a tumor or auscultated a chest. There were no recitations. Nor were there ward classes or other means for actual contact by the student with disease.

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[1] Abstract of an address delivered at the Semicentennial Meeting of the American Medical Association, Philadelphia, June 3, 1897.

Now we may congratulate ourselves that the majority of the medical schools of the country have a graded course of four years, each covering not less than six and often eight months, not only lectures, but in many instances constant and searching recitations; almost a score of laboratories in which each student actually does the work of observation and experiment; ward classes in which every man is obliged to train his eyes, his ears, his fingers, and his judgment in the examination of patients in every department of medicine; to ferret out the history of the cases brought before him, ascertain symptoms, seek for physical signs, reach a diagnosis, determine the treatment, and often actually to prescribe and to assist at operations.

Of the text-books in use forty years ago, except Pancoast's "Operative Surgery," every one of them was the work of a European. Gross' "System of Surgery," which has probably had a wider influence in educating the profession than any other general surgical text-book issued up to the present time, was first published in 1859. This was far in advance of most of the surgical text-books then in use. The literary labors of American surgeons consisted chiefly in translating foreign surgeries or in annotating American editions of English text-books. Within the last two decades, and especially the last, we all know without my undertaking the invidious task of naming them, how many distinctly American surgeries have been written, and we may say without undue national vanity that they are the equals of any similar European works.

On more than one occasion I have had to call attention to the difference between American surgery and that of Europe. While in the department of the Practice of Surgery, after a full acquaintance and observation with European men and methods, I can state my deliberate conclusion that the best American surgeons are the peers of the best European surgeons; yet in the department of original research and especially of laboratory work, we must confess our very evident shortcomings.

To attempt to impress upon the members of the American Medical Association the need for such original research in this country is a work of supererogation; but I may with propriety insist, with all the ardent and intense conviction I feel, that every one of us, as occasion offers, should urge upon our wealthy liberal-minded fellow-citizens the duty and also the privilege of founding in connection with every medical school, laboratories of research, the good influence and beneficent results of which can never be estimated in paltry dollars and cents. Yet tried even by this commercial standard science pays. The early recognition of the germs of cholera at the port of New York some years ago by preventing the entrance of such a commerce-destroying epidemic, leaving wholly out of consideration the saving of human life, saved to the citizens of the metropolis more millions of dollars than are represented many times over by the cost of all the laboratories now existing in this country. Our merchants should be made to understand, therefore, that even from a financial point of view, to say nothing of the humanitarian, the cheapest means of preventing the enormous business losses which occur from epidemics is by such scientific and hygienic measures as the laboratory makes possible.

Allied to medical teaching, and the most important adjunct to medical literature, is the establishment of extensive medical libraries. In this, as an American, I am proud of my own country. No foreign nation can point with equal pride to any such medical libraries as the last thirty years have developed in this country. Foremost, not only among American libraries, but in the world, is that of the Surgeon-General's Office of the United States Army in Washington. Not only has it gathered thousands of medical books and the 1000 medical journals from all over the world, but the entire library is managed with a liberality which makes it the admiration and the envy of the foreigners. Its treasures are freely at the service of the entire profession of the country, and the publication, under the editorship of Dr. John S. Billings, of its magnificent Index Catalogue has made the whole world debtor to America. We trust that a more liberal Congress may see that if even the small amounts thus far given to it have made it of such immense value, still larger and more generous appropriations would keep it ever in the van.

In addition to this, the libraries of the College of Physicians of Philadelphia, of the New York Academy of Medicine, and of the Boston Medical Library Association are only surpassed by those of the Faculties of Medicine in Paris, of the Royal College of Surgeons of London, and of the Military Medical Institute of St. Petersburg, while those of the Newberry Library in Chicago (thanks to our honored and liberal President), of the New York Hospital, and of the Pennsylvania Hospital rank well with the best European libraries. With such literary opportunities, therefore, had we equally good scientific laboratories, the possibilities of American medicine and surgery would be almost unbounded.

The scientific progress in this half-century of surgery has separated us as by a great gulf from the past. Great theologians, such as a Calvin or a Jonathan Edwards, were they recalled to life, could discourse as learnedly as ever of predestination and free-will; great preachers, as a Beecher or a Spurgeon, could stir our souls and warm our hearts as of old; great jurists, as a Justinian or a Marshall, could expound the same principles of law which hold good for all time; great forensic orators, as a Burke or a Webster, could convince us by the same arguments and arouse us by the same invectives or the same eloquence that made our fathers willing captives to their silver tongues. But to-day a Velpeau, a Sir William Fergusson, or a Pancoast, all of whom have died since 1867, could not teach modern surgical principles, nor perform a modern surgical operation. Even our everyday surgical vocabulary—anesthesia, bacteria, infection, immunity, antisepsis and asepsis, toxin and antitoxin—would be unintelligible jargon to them; and our modern operations on the brain, the chest, the abdomen, and the pelvis would make them wonder whether we had not lost our senses, until, seeing the almost uniform and almost painless recoveries, they would thank God for the magnificent progress of the last half-century which had vouchsafed such magical, nay, such almost divine, power to the modern surgeon.

The development of modern surgery, apart from surgical teaching, libraries, and laboratories, is dependent on several noteworthy factors. These have to do partly with the discovery and development of surgical principles and partly with the development of surgical practice. Now the one and now the other is in advance. Each is the handmaid of the other. In Listerism we see surgical practice outstripping surgical principles, for of Lister it might truly be said that by the "scientific use of the imagination" he saw the germs "when as yet there were none of them." His surgical insight convinced him of the existence of the germs of suppuration years before Ogston's and Rosembaum's discovery of the pyogenic organism. On the other hand the multiplication of these discoveries, which have followed, illustrate the converse—science forging ahead of practice and pointing the way to new achievements in the healing art.

Foremost among the important studies which the past fifty years have seen established on a firm foundation are *Pathology and Pathologic Anatomy*. It is not a little credit to America that the first "Pathology" written in the English language was written by a young American doctor in a then small western town as early as 1839, and it was a graceful tribute to the author when Virchow, the Nestor of modern pathology, held up a copy of the first edition of Gross' "Pathological Anatomy" to the gaze of his fellow-scientists at a dinner tendered to the Nestor of American Surgery.

In spite of Gross' book, however, pathology and pathologic anatomy were almost unknown sciences in 1847. The Pathological Society of Dublin was founded in 1839, that of New York in 1844, that of London in 1846, and that of Philadelphia in 1857. The microscope and especially microscopic methods of staining, section cutting, and the like were in their infancy or may, indeed, be said scarcely to have existed. No accurate views of pathology could be entertained without these aids. What is now the heritage of every first-year student, was beyond the possibilities of the most advanced teacher of fifty years ago.

Allied sciences have been put under tribute to surgery. In physics the discovery of the *Röntgen ray* is so recent as to require only mention.

It is due, however, especially to the development of *Embryology* and *Comparative Anatomy* in combination with pathology, that our views of the nature of the disease have become so much more accurate.

The year before the American Medical Association was organized, the world was startled and surgery revolutionized by the introduction of anesthesia; first of ether in America in 1846 and of chloroform in Edinburgh in the following year. What this has done for the amelioration of the horrors of pre-anesthetic surgery, very few now living can appreciate. Instead of shrieks, cries, and groans of the patient, everything now proceeds with that quiet and leisure which is essential to the performance of many, if not most, of our modern elaborate and prolonged surgical operations. Now, "the fierce extremity of suffering has been steeped in the waters of oblivion and the deepest furrow in the knotted brow of agony has been smoothed away forever." Who could possibly endure the torture of an operation lasting for one, two, or it may be even three hours, when every minute seems an eternity of agony? I would rather be the discoverer of anesthesia than have won an Austerlitz or a Waterloo.

The ideal anesthetic has not yet been obtained.

No one can fail to see that ether or chloroform and also a few others which occasionally replace them have very real dangers. The ideal anesthetic will abolish pain by the abolition of consciousness, *but without danger to life*. That it will be found is as certain as that experiment and progress are our watchwords.

Antiseptic Surgery. — While the exact date of the revelation in surgery due to anesthesia can be fixed, a later revolution in our surgical methods came in so gradually that one cannot name any special day or even year when it was introduced. But, while the day or year cannot be given, the one man to whom this great revolution in modern surgery is due is well known. The name of Lister *primus inter pares* is honored throughout the entire surgical world and his recent distinction as the first medical peer of the United Kingdom is an honor conferred not upon Lord Lister alone, but upon the entire profession and worthily marks a new departure in the recognition of medical science by the Queen.

So far as this country is concerned, the introduction of antiseptic surgery may be said to date from the visit of Mr. Lister to this same city of Brotherly Love at the Centennial International Congress of 1876. Derided as first as a "fad" or as "nothing more than surgical cleanliness," it has now won its way over the whole world. A few laggards in the surgical army there are who even yet do not practice modern antiseptic or aseptic surgery, but the overwhelming majority of the profession recognize that the world owes a debt to Lord Lister, which no honor can pay. His service to humanity will never be forgotten and probably never will be surpassed in its wide-reaching beneficent influence.

As an outgrowth from the practical development of antiseptic surgery has arisen a wholly new science and a wholly new method of practice, which bid fair to revolutionize our modern therapeutics—*Bacteriology and Orrhotherapy*. These are so recent that it is dangerous to prophesy what may occur, but it is not venturing far to predict that fifty years from now we shall be able not only easily to convert infected into non-infected wounds, but that by some means as yet undiscovered we shall be able successfully to combat the infection and prevent the dire ravages of tuberculosis, of syphilis, of cancer, of sarcoma, and possibly even the occurrence of benign tumors. That will be, indeed, the golden age when surgery will be robbed of nearly all its terrors, when a peaceful victory will abolish our present instruments and the majority of our present operations.

Animal Experimentation has had also a very large share in the development of modern surgery. The whole question of the introduction of animal ligatures was begun in America by Physick, who used buckskin, and his follower, Dorsey, who used kid and cut both ends short; Hartshorne, who used parchment, and Bellenger and Eve, the tendon of the deer, and has been solved principally by experiment upon animals in order to determine accurately the behavior of such ligatures in the tissues. Only professional readers can appreciate what a boon to humanity this single achievement has been. Modern cerebral surgery also owes its exactness and success almost wholly to cerebral localization and antisepsis, both of which were first studied by experiment upon animals, and later by the application of the knowledge so gained to man. *Bacteriology would not now exist as a science nor would accurate modern surgery and a large part of modern medicine be possible had experiments upon animals been prohibited, as some zoophilus women who love dogs better than men and women, and even little children, desire.*

Time will not permit me to trace chronologically the introduction of new instruments and new operations.

One of the most striking departments in which progress has been made is in that of the nervous system. In this Mitchell, though not a surgeon, has suggested many surgical advances. I have already quoted South's dictum as to fractures of the skull, a dictum which is now violated, with the happiest results, by almost every surgeon in the land. In addition to this, a very large number of tumors of the brain have been successfully removed, tumors which, before 1884, were considered as wholly outside the domain of surgery. To our English brethren, Godlee, Horsley, and Macewen, above all others, is due the credit of establishing cerebral surgery on a firm basis of right principles and successful technic.

In abscesses of the brain we have a lesion which is still more amenable to treatment, and the number of recoveries now mounts even into the hundreds. Thanks to the otologist, we can now, by proper treatment, in many cases do better than operate on these abscesses, we can prevent them.

Tumors of the spine, since Mr. Horsley's brilliant paper in 1888, have been proved accessible to the modern surgeon. Though Abbé's division of the posterior nerve roots in cases of intractable neuralgia has not been followed by all the success we could wish, it has proved that the operation is a practicable one. While, in the words of the hymn, we have not yet "stretched every nerve," we have almost realized that pious exhortation.

Not only have accumulations within the pleura been evacuated, but Roberts was among the pioneers in the operation of *paracentesis pericardii*, while the surgery of the lung is now only taking its first tentative steps. The pericardium has also been sutured, and even the heart itself has twice been sutured with one complete recovery. We were taught by the younger Gross that the great veins could be successfully tied, and the recent researches of Abbé and Murphy may open a new chapter in the surgery of the arteries by substituting suture for occlusion by the ligature.

The accessory organs in the abdomen have been conquered by the modern surgeon; fifty-seven tumors of the liver have been removed with a mortality as low as 13.5 per cent. The world owes to America the operation of cholecystotomy, since it was first done by Bobbs in 1868, and was popularized by the powerful influence of Sims in 1870. Pancreatic cysts, chiefly through the labors of Senn, are now amenable to treatment. The spleen has been extirpated many times.

The appendix, that meager but most troublesome ancestral vestige which, with the bicycle, has been the faithful friend of the surgeon through the past few years of commercial depression, has been recognized as the real origin of the so-frequent abscesses in the right iliac fossa. Beginning with Willard Parker's paper in 1867 and Fitz's memorable paper in 1886, the treatment of appendicitis and even its much-abused name are distinctly of American origin, and are an immense credit to American surgery.

Until Simon's classical experiments on dogs in 1870 (*Deut. Klinik*, xxii, 137), the kidney was a practically inaccessible organ, but now, when it wanders, we secure it by suture; when there is a stone in it, we open it fearlessly and remove the stone; when it is distended with pus or urine, we drain it; and if it is past hope of recovery, we extirpate it, all with most remarkable success. Even stones in the ureter or a divided ureter, Cabot, Fenger, Kelly, and Van Hook have shown us, can be dealt with successfully.

The surgery of the pelvic organs has, one may say, been created since 1847, but its triumphs are so many that time allows me only a word. Sims' treatment of vesicovaginal fistula and his introduction of silver wire in 1852 was distinctly an American triumph.

A hasty review such as has been given of the improvements in surgery within the last fifty years does much more than show us the adroitness, audacity, and success of the modern surgeon. That is the thing which strikes us most as surgeons, but we must regard all these improvements also from the side of the patient and the family, and see what it means. It means a prolongation of life by operations which, while not without pain and suffering during recovery, have been robbed of all their primary terrors by anesthesia, and most of their subsequent pain and suffering by antisepsis. It means that patients who, in 1847, were hopelessly consigned to the grave, after weeks and months of suffering, are now, in the vast majority of cases, rescued from death. It means that families formerly bereft of husband or wife, parent or child, and left to spend years of sorrow, of suffering, and, in many cases, of poverty, because the breadwinners were taken away, have now restored to them their loved ones, in health and strength and usefulness. It means that the hecatombs of a Cæsar, of an Alexander, a Napoleon, are offset by the beneficent labors of a Morton, a Warren, a Lister, who are, and who for all time will be, blessed by many a poor patient who never heard of them, instead of being cursed as the destroyers of nations and of homes innumerable. It means that man's inhumanity to man shall be replaced by a scientific and Christian altruism which sheds blessings and benefits on the whole human race, seeing in the patient, whether saint or sinner, only a human being who is suffering from accident or disease, whom it is the province of the surgeon, in imitation of Him who went about doing good, to restore to health and happiness. Even where life cannot be prolonged, the agonies of death itself can be soothed by his hand and his fruitful skill.

What the future has in store for us we can only dream. Two diametrically opposing tendencies are prominent in modern surgery: radical interference with disease, so that there is scarcely now a single organ or portion of the body not within our reach; yet, on the other hand, a remarkably conservative tendency in cultivating remedial rather than radical surgery. Joints so diseased as once to require amputation are now treated conservatively with the best results. Ovaries, a portion of which can be preserved, are kept in the abdomen; kidneys once doomed to extirpation are now partially removed, and bones so diseased that they then required amputation are now excised and the limb preserved. Experiments upon animals have recently given us wholly new views of infection and of the origin of many diseases, and also the little knowledge that we yet have as to either natural or acquired immunity, and to a consequent orrhotherapy.

It is, I believe, on these lines that our more immediate future triumphs will be achieved. We have discovered the actual cause of tetanus, tuberculosis, erysipelas, suppuration, and a host of other diseases and conditions, of the cause of which we were wholly ignorant a few years ago. The cause of many other disorders, both medical and surgical, still remain hidden from our view. We know almost nothing of the origin of benign tumors, and are groping to discover the origin of cancer, sarcoma, and other malignant growths. When we have discovered the cause, we are nearly half way, or at least a long way on the road to the discovery of the cure, and I think it not unlikely that in 1947 your then orator will be able to point to the time when a definite knowledge of the causes of these diseases was attained and probably to a time when their cure was first instituted.

That will be a surgical paradise when we can lay aside the knife and by means of suitable toxins or antitoxins, drugs, or other methods of treatment, control inflammation, arrest suppuration, stay the ravages of tuberculosis, or of syphilis, abort or disperse tumors, cure cancer, and it may be, so prolong human life that all of his then audience will die either of accident or of old age. Would that you and I could be alive in 1947 to join in the glorious surgical Te Deum!

STERCORIN AND CHOLESTEREMIA.[1]

By AUSTIN FLINT, M.D.,
OF NEW YORK;
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LOOKING far into the future, it seems possible that our successors may fix upon the month of May, 1946, as the true centennial of the American Medical Association, dating the origin of this body from May, 1846, when a convention of representatives of our profession, held in New York, proposed the formation of a national association, which was formally organized in 1847.

It is not too much to say that the convention of May, 1846, marked an era in the history of medical organization in the United States. It had become necessary that the medical profession should be unified and separated from those practising under sectarian designations, particularly as at least one sect was beginning to secure the confidence of men otherwise intelligent, and assumed to practice medicine on a scientific basis. The status of medicine forty years ago is quite within my recollection. Medicine is not, never was, and never will be an exact science; but it always has been progressive, and never more so than at the present time. Fifty years ago, perhaps, medicine merited the reproach of being the least exact of all sciences; but its progress within the last fifteen years has been so prodigious that it is now in advance of them all. Fifty years ago, skill in the diagnosis of certain diseases was acquired only by long practice and large experience. With our present methods, properly employed, it is impossible to make an error in the diagnosis of many of the diseases which formerly presented difficulties, such as typhoid fever, tuberculosis, diphtheria, cholera, and most of the neoplasms. To say that pathology has been revolutionized within the last ten or fifteen years is not enough—a new pathology has been created, and with it have come an intelligent hygiene, prevention, and therapeutics, based upon exact scientific knowledge. As no human imagination fifty years ago could have pictured the condition of the medicine of to-day, so it to-day seems impossible to imagine the progress of another half-century. Never, since medicine became a science, has medical history been made so fast as now. Between the time of writing and of delivering this address, scientific labor may give birth to a discovery destined to revolutionize some department of medicine, as Pasteur, Koch, and their followers have revolutionized therapeutics, and as Lister created a new surgery.

It is a matter of congratulation that the name of this body was early changed from "National" to "American" Medical Association. We have good reason to be proud of American medicine, and our great representative association may properly claim a distinctive title. When one is able to call up at random the discoveries in gastric digestion, anesthesia in surgery and obstetrics, the successful ligation of the arteria innominata, the operation for vesicovaginal fistula, ovariotomy, and intestinal anastomosis, to say nothing of minor advances in medicine and surgery, can we not claim a distinctive place for American medicine?

It is the prerogative of the presiding officer of this Association to make recommendations, and this is not the province of one appointed simply to give an anniversary discourse. The remainder of the time that has been placed at my disposal I shall venture to occupy with a subject which I hope may not prove entirely unworthy of your attention.

Stercorin and Cholesteremia.—While the presentation, on this occasion, of researches made and published thirty-five years ago—viewing the question from a physiologic standpoint—calls for an explanation and perhaps an apology, none is required if their great importance in relation to the pathology of the liver be considered, especially as cholesteremia is by no means accepted as a distinct pathologic condition. Were it not that stercorin has just been rediscovered in Germany by two eminent physiologic chemists, who make no mention of its full description in 1862 and have even called it by another name, I probably should not have repeated and extended my original observations. As it is, however, I feel that I may properly, as an American investigator, make my reclamation before the American Medical Association.

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[1] Abstract of an address delivered at the Semicentennial Anniversary of the American Medical Association, Philadelphia, June 2, 1896.

Although my paper, published in *The American Journal of the Medical Sciences* in October, 1862, received an "honorable mention" and substantial recognition from the Institute of France, and my observations have been verified and extended by French and German investigators, many writers on physiology and pathology, even the most recent, fail to recognize such a substance as stercorin and, in treating of cholesterin, speak of its function as obscure or unknown.[1] In "An American Text-book of Physiology," Philadelphia, 1896, cholesterin is described as a constant constituent of the bile, very widely distributed in the body, and eliminated by the liver cells from the blood. "That it is an excretion is indicated by the fact that it is eliminated unchanged in the feces." Stercorin is not mentioned. As a matter of fact, cholesterin does not occur in the human feces in health, and its presence in this situation is exceptional.

In Hoppe-Seyler's *Zeitschrift für Physiologische Chemie*, Strassburg, 1896, is a paper by Bondzynski and Humnicki, entitled "The Destination of Cholesterin in the Animal Organism." The authors claim to have discovered a new constituent of the human feces, which they call "koprosterin." This substance is identical with stercorin, fully described in 1862. The original stercorin, of which specimens obtained in 1862 are in my possession, was extracted from the human feces by the following process: The dried and pulverized feces were extracted with ether. The ethereal extract was passed through animal charcoal and afterward evaporated. The residue was then extracted with boiling alcohol. The alcoholic extract was treated with potassium hydrate solution, at a temperature near the boiling point of water, in order to remove the fats by saponification, which were washed out with water until the filtrate was neutral and perfectly clear. The filtrate was dried, extracted with ether, and the ethereal extract evaporated to dryness and extracted with boiling alcohol. The stercorin was obtained from the alcoholic extract by repeated crystallization. This process was exactly repeated in our recent observations, and, at the same time, stercorin was extracted by the process described by Bondzynski and Humnicki.

The opinion expressed by Hoppe-Seyler, Hofmann, and indeed many others, that stercorin simply is impure cholesterin, cannot have been based upon a practical knowledge of this substance. Stercorin has a well-defined formula—$C_{27}H_{48}O$—which has been calculated and verified by the formation of esters. Its crystals are quite different from crystals of cholesterin, and are invariable in form, arrangement, and color. It was extracted by methods practically the same as those used in the extraction of cholesterin. In view of these facts, to assume that stercorin is an impure substance, one must deny a positive scientific basis to organic chemistry.

In the recent, as well as in the original, observations, it was clearly shown that cholesterin is changed into stercorin in passing down the intestinal canal. I found that this change involved processes incidental to intestinal digestion. Cholesterin and no stercorin was found in the feces of fasting animals and in the meconium. Bondzynski and Humnicki found and increased proportion of "koprosterin" in human feces after the ingestion of a certain quantity of cholesterin. They also showed that cholesterin unites readily with bromin, while "koprosterin" forms no such combination; and, indeed, by the use of bromin, these two substances may be separated when they exist together. They confirmed the empirical formula for their product by the formation of a number of esters.

It is now generally admitted that the bile, in addition to its function connected with digestion, contains one or more excrementitious matters. Taking into consideration the various ingredients of the bile, there seems to be but one which can logically be compared to urea. Cholesterin is found in many of the tissues and organs ot the body and exists in the blood. Likening it to urea, it becomes a question whether it is formed in the liver and discharged in the bile or is merely separated from the blood by the liver and excreted.

Passing from these observations to the pathologic relations of cholesterin, after examining three specimens of normal blood and finding the proportion of cholesterin from 0.445 to 0.751 of a part per thousand, examinations were made of the blood of patients with simple jaundice and those with what is called icterus gravis, the cases terminating fatally with grave nervous symptoms. In a case of simple jaundice, terminating in recovery at the end of about four weeks, the blood contained 0.508 of a part per thousand; well within the limits in normal blood. In a case of jaundice with cirrhosis, terminating fatally with serious nervous disturbance, the blood taken six days before death contained 1.850 part per thousand of cholesterin—an immense increase over the normal proportion. In this case, on *post-mortem* examination, the liver was found contracted, and the gall-bladder was shrunken, containing only about seven cubic centimeters of bile.

The question of cholesteremia has been much discussed since 1862, for the most part with scant approval or without acceptance. However, Picot,[1] in 1872, reported a fatal case of "grave jaundice" in which he determined a great increase in the proportion of cholesterin in the blood, 1.804 parts per thousand. Many attempts have been made, also, to produce toxic effects by injecting cholesterin into the blood, but most of them have been unsuccessful on account of mechanic obstruction of the blood-vessels. In 1873, however, Koloman Müller[1] succeeded by injecting cholesterin rubbed with glycerin and mixed with soap and water. In five experiments on dogs, injecting in each 0.045 gram of cholesterin, he produced a complete representation of the phenomena of "grave jaundice."

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[1] Foster, "A Text-book of Physiology," 1895, p. 356.

[1] *Journal de l'Anatomie*, Paris, 1872, tome viii, p. 247, *et seq.*

It must be remembered that the liver is by far the largest gland in the body; that it secretes a fluid which is known to have a double function, one connected with digestion and the other with the elimination of cholesterin; that the blood from the digestive tract all passes through this organ, where it undergoes certain changes; that it probably stores up the products of amylolytic digestion in the form of glycogen; that it arrests certain poisons, and that it is the chief organ concerned in the production of urea, which is discharged by the kidneys. It may have other uses in what is now called internal secretion, in addition to that of destruction of blood-corpuscles and the change of hemoglobin into bilirubin. With all these known varied uses of the liver, however, the pathology of hepatic diseases is most obscure. We do not know, even, the cause and mechanism of the formation of gall-stones, which are often composed almost entirely of cholesterin.

The term, acholia, as used in pathology, now means very little and conveys no distinct idea of the causes of the nervous symptoms which attend this condition. The term cholemia is generally regarded as almost synonymous with jaundice. If cholesteremia be recognized as a distinct pathologic condition, with symptoms due either to the accumulation of cholesterin in the blood, acting as a toxic substance, or to imperfect separation of cholesterin from the nervous tissue, a positive advance will be made in our knowledge of the pathology of many obscure liver disorders.

The quantitative estimation of cholerestin in the blood is not difficult, and it does not require more than from four to six or eight grams of blood. The only tedious manipulations are the drying, saponification, and weighing; and these are readily done in a well-appointed laboratory. Some process may be devised which will expedite this extraction. If examinations of the blood were to be made in cases of obscure nervous disturbance, in epilepsy, and other disorders of this nature, it is possible that cholesterin may be found to play an important part in their pathology. The fact that bromin readily combines with cholesterin, taken in connection with the wide use of the bromids in diseases of the nervous system, is very suggestive. May not the bromids promote the elimination of cholesterin, a substance which is so insoluble and which forms few combinations? These points seem well worthy of the consideration of pathologists and therapeutists. Certainly the physiologic and pathologic relations of cholesterin offer a wide, and perhaps fruitful, field for further observation.

MECHANISM AND TREATMENT OF PERINEAL LACERATIONS.[1]

By JOSEPH PRICE, M.D.,
OF PHILADELPHIA.

MANY men who profess intelligence of surgical procedures instituted for the relief of abdominal difficulties are entirely unprepared to deal with injuries of the perineum or cervix. There are even many of large obstetrical practice who appear sincere in declaring that no rupture of the perineum has ever occurred in their work, and that all their patients have normal perinea. There is but one explanation of this. We need only recollect that prominent instructors in obstetrics have declared that a laceration of the perineum is practically impossible under their various methods of procedure, and therefore omit even a preparation for the contingency. We cannot so easily comprehend, however, the negligence of practitioners whose personal motives should have induced a greater care in this matter than we now observe.

It is discouraging to me to consider the haste with which our younger physicians attempt the larger work of abdominal surgery and seem not to appreciate the necessity of a minute understanding of the functions of tissues, especially those involved in and surrounding organs with which we have to deal in obstetric practice. It is a matter which no amount of talk will remedy. As mere economy in this ambition I would suggest that a little more attention be directed to this particular subject of perineal lacerations. That a rupture of the perineum may be so entirely concealed as to eventually deceive the most careful examiner there is no doubt; neither do I doubt that the search is often omitted or unintelligently performed.

The teaching that these repairs are easily made has led to much unskilful treatment, treatment that leaves the patient in a worse condition than existed before anything was done in the way of attempted repair.

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[1] "Ueber Cholesterämie," *Archiv. für experimentelle Pathologie und Pharmakologie*, Leipzig, 1873, Bd. i, S. 213, *et seq.*

[1] Read at the Semicentennial Meeting of the American Medical Association, Philadelphia, June 1–4, 1897.

The supposed condition tempts to the undertaking of that which, while not the most difficult surgery, requires, from the very delicacy and sensitiveness of the parts, careful and refined work.

It would not be unprofitable for a surgeon to undergo an apprenticeship in a mechanic's workshop where his instructor could explain the cycloidal and epicycloidal lines upon which his gear wheels must be formed, or allow him to experience directly the very disastrous results of the slightest neglect in manipulating those very exact little dealers, machines. Then I think he would appreciate the responsibility of altering indefinitely the organs of a human being, or of suffering them to remain unrepaired where accident has changed or broken normal relations. True, he has in Nature a wonderful corrector of his mischief, whose effort is ever for cure. Nature has been defined "as the good will of God expressed in facts;" nowhere has this good will been more marvelously expressed than in the correction of our errors. But it should be kept in mind that Nature despises an irrational, blundering performance as she does a vacuum.

Our surgical triumphs are largely those of common sense; they are the result of reducing everything to the simplest form consistent with completeness. There is not sufficient appreciation of the value of simplicity and directness, nor of completeness. In plastic surgery, as in all other, I would aim toward such an end. I would do an operation that would restore the perineum to as natural a condition as possible. A great deal depends on whether the tear be partial or complete, central or lateral.

It must be remembered that the perineum proper is made up of all muscles composing the lower *pelvic diaphragm*, and that this pelvic diaphragm is anatomically the adjunct and coefficient of the upper or true diaphragm of the respiratory apparatus. This fact is of value in estimating the importance and significance of pelvic lacerations. It should be remembered that every perineal tear begins on the inside, or, in other words, proceeds from above downward, from within outward—it happens only as an accident of extreme rarity that there is any important outside tear without a co-existing internal tear. And beside this fact another one is to be placed—there may be most serious internal laceration without any external manifestation, so far as the skin is concerned. There may be so much over-distension of the tissues that all pelvic support is absent without any evidence of real laceration. This sort of a tear bears the same relation to evident laceration as does a free open incision of a muscle to a subcutaneous division of a muscle. Complete perineal laceration is a term usually applied to tears through the sphincter. These tears are regarded as the most important on account of the discomfort they entail. Women with the sphincter ani lacerated have a miserable existence, though apart from this the other complications and real calamities of pelvic lacerations are often absent. The sphincter may be torn through, and still there may be no sagging of the pelvic contents, no cystocele, and no rectocele, no prolapsus uteri. This fact is explicable: in a distinctly central tear the lateral attachment of the muscles and fascia are uninjured, while the middle junction of the perineal muscles is simply split, divided, or separated, and consequently the support, while diminished, is sufficient to withstand the pressure of the pelvic contents. The resistance of the muscles is diminished—not destroyed. Complete tears, in my opinion, ought to be considered as including all deep fascial and muscle lacerations, either on one or both sides, with a co-existing or non-co-existing sphincter tear, as the case may be.

All these tears should be approached as distinct surgical lesions, to be repaired in the line of their anatomic destruction, and not as cosmetic operations, the object of which is to obtain superficial appearances without regard to completeness and utility. Heaping up of tissue, outside the lines of resistance, and tension or mere thickening of the mucous membrane and skin does not make a true perineum; neither does a set of outside sutures, however much they may draw the parts together, afford any anatomic counterpart of a perineum. From this point of view all the so-called flap-splitting operations for perineal tears are only puckering operations, bringing parts within the sutures that have never been severed, and in many cases taking them out of their proper relations. Flap-splitting operations are really *misleading superficial procedures.* They attack tissues not in the lines of their real rupture, and do not and cannot go to the real origin of the tears. They do not afford an end-to-end adaptation of the torn muscle, but substitute for this a lateral apposition, simulating *end-to-end* restoration, which can be readily demonstrated. The Emmet operation, as originally devised and afterward modified by him, is the foundation for all successful operations on the lacerated perineum, either with or without *sphincter* tear. This, it is to be remembered, is always an inside operation.

Even in sphincter tears, two or three outside stitches are all that in a majority of cases are necessary. Its so-called modifications are extensions only of the original idea of Emmet, and are only original in the use of a greater denudation, with a consequent increase in the number of stitches.

The loss of tissue objected to in the Emmet operation is more than equaled or compensated for by the lateral apposition. Moreover, it is to be kept in mind that the sphincter is a distinct anatomic unit —and that any flap-splitting which attempts to repair this, together with other laceration, is over-reaching itself and attempting too much in its efforts at one time to repair distinct lesions. When the fascia is injured, in addition to the sphincter tear, the injury is to be remedied by the ordinary Emmet operation. This operation, by its denudation, brings into relation large triangular levels on one or both sides, putting into relation the torn ends of the torn muscles. When the sphincter ani is ruptured its torn ends are drawn outward and backward until they lie on a line with the posterior line of the rectum. In other words, the muscle is straightened. The depressions on either side of the anus are caused by the torn ends of the muscle retracting the mucous membrane, thus forming the characteristic dimples.

The denudation should be made so as to expose the cut ends of the muscle on either side, and continued upward into the bowel as far as the laceration extends, between the rectum and vagina, into the rectovaginal tissue. Two sets of sutures are to be used ordinarily. The first is the deep-set vaginal, and restores the rectovaginal septum, bringing the parts into the relation they would assume were there no sphincter tear, while the other sutures are introduced as in an ordinary or fascial tear. The rectal or vaginal sutures are, of course, the first to be introduced. If catgut is used for the closure of the bowel, their method of introduction is left to the choice of the operator. If silk, silver wire, or silkworm-gut is used, the sutures must be introduced so as to be tied, twisted, or shotted on the vaginal side. After the tear into the rectovaginal septum has been closed, attention must be given to bringing the ends of the sphincter accurately into apposition. For this purpose the needle must be introduced at the edge of the torn muscle, directed upward, then backward, to the internal edge of the muscle, so as to bring the retracted central portions to a level. If this procedure is adopted on both sides, a flat surface of muscular tissue is obtained and the apposition will be complete. Failure of this operation is easily discoverable. If a fistula persists, there is generally a more or less complete failure of the operation, and the desired effect is not obtained.

To insure the complete success of the operation, extreme care is necessary to restore the bowel and to treat the sphincter as an integral portion of the bowel, bringing the sutures down so as to leave no pocket between the bowel proper and that portion into which the sphincter is inserted.

The instruments formerly suggested as the essentials for perineal repair, of which the Peaslee or Baker-Brown needle may be taken as the type, have no place in the delicate scientific surgery of these parts. Big sutures, heavy ligatures, clumsy instruments have no more place here than in other surgery. The ordinary short, strong sewing-needle serves the purpose fully in most cases, though the Emmet strong, fine, short needle for general use is preferable. Silkworm-gut or silver wire are the preferable sutures. These, with a needle-holder without lock, shot-compressor and tenaculum, are really the only instruments required. Here, as in all surgery, few and simple instruments serve best.

CONDENSED MILK; ITS USES AND LIMITATIONS IN INFANT-FEEDING.[1]

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THROUGH the ignorant use of condensed milk as an infant food, many lives are lost yearly in our larger cities, while, on the other hand, to its intelligent use may be attributed the fact that many lives are saved. In considering the value of any artificial food for infants, we must be governed by one standard—that of mother's milk, the nourishment the child has a right to expect.

An analysis of mother's milk shows that it contains from 3½ to 4 per cent. of fats, 2 per cent. of proteids, and 7 per cent. of sugar. The analysis of a condensed-milk mixture, when diluted for use in the proportion of one part in six of water, gives us 1 per cent. of fat, 1.2 per cent. of proteids, and 8 per cent. of sugar, a greater part of the latter being cane sugar. It is extremely rare, however, that we meet with a child that is being fed on so strong a mixture, for the reason that it will almost surely produce colic and indigestion. The condensed-milk-fed children who come under my care are being fed, as a rule, on a mixture diluted to one in twelve or one in fourteen. The one-in-twelve dilution gives a mixture containing 0.5 per cent. of fat, 0.6 per cent. of proteids, and 4 per cent. of sugar. Comparing this with breast-milk, it may readily be seen how inefficient it must be for a permanent diet. Even if the one-in-six dilution is given, it will still be inadequate.

Apparent as the shortcomings are, many children will do comparatively well in very early life on the weaker dilutions, that is, one-in-twelve or one-in-fourteen. There is sufficient of the carbohydrate to produce heat, and the proteids, though small in quantity, furnish the requisite amount of nitrogen. The proteid of cows' milk differs from that of woman's milk in chemical composition, and is more difficult of digestion. This we have known for a long time; but there is another important difference: The child requires a smaller amount of the proteids of cows' milk, although the relative nutritional properties of the proteids cannot be exactly determined. This is not a supposition, but a fact that has been demonstrated clinically to my satisfaction, and it helps to explain why infants will do well for a time on condensed milk. Many thrive on the ordinary canned variety, diluted one in twelve, until the third month is reached; then the demands of the system exceed the supply of fat and proteids. If the diet is continued, rachitis and malnutrition of varying degrees will almost always ensue.

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[1] Read at the Semicentennial Meeting of the American Medical Association, Philadelphia, June 1-4, 1897.

Of the many hundred marasmic and rachitic infants that I have had an opportunity to observe, fully ninety-five per cent. had been fed on the meal foods or on canned condensed milk, chiefly the latter. This ill-conditioned class of children, with their starved muscular and nervous systems and catarrhal tendencies, fall an easy prey to the infectious diseases during the entire year, to bronchopneumonia in winter, and to the gastro-intestinal diseases in summer. Notwithstanding what has been said, I occasionally meet with children that have been fed exclusively on condensed milk up to the ninth or tenth month, and that have thrived fairly well. These will usually present some evidences of bone rachitis, although the development otherwise will apparently be normal. These infants are held up to us as evidences of the value of the diet in question, and we hear of a great many more than we see. These isolated instances are to be explained by the fact that there are a few infants whose adaptation to abnormal conditions is so great that they cannot be injured by ordinary improper feeding.

An illustration of this was furnished by the case of a well-nourished one-year-old infant that was brought to the out-patient department of the Babies' Hospital to be treated for bronchitis. Its diet up to the third month had been mother's milk and condensed milk. Since then it had consisted of meat, potatoes, bread, rice, crackers, soup, and condensed milk. Tea and coffee were given when the child wanted a drink, and it had beer on Sundays and holidays. Another case in point: A babe six months of age was brought to the dispensary on account of a sharp attack of diarrhea and vomiting. In addition to medicinal treatment, a diet of barley-water and egg-water was ordered. Recovery followed shortly, and the mother was instructed to gradually resume the former milk diet. I did not see the patient for two months, when he was brought to the dispensary because of an attack of whooping cough. While being undressed, preparatory to an examination of the chest being made, I noticed that the stomach was enormously enlarged. Upon inquiry as to the cause, the mother replied that she supposed it was due to the large quantity of egg- and barley-water taken. A second gastro-intestinal attack had followed the resumption of a milk diet, and the mother thought it would be easier to keep him well on egg- and barley-water than to keep him ill on milk. He had ingested from five to six pints of this preparation daily, and although rather pale, was strong and active. These children thrived for the same reason that older children sometimes thrive on an exclusive diet of canned condensed milk or of plain meal, but the badly fed children who manage to escape resulting disease because of special powers of adaptation are few in comparison with the number that fail. In short, condensed milk is unsuitable as a permanent infant food, in that it is inadequate to the demands of the growing child.

In spite of what has been said, my out-patients consume hundreds of pounds of condensed milk yearly, and under my direction. If condensed milk is so unsatisfactory a diet, as generally used, when, how, and under what conditions may its use be advanced? To begin with, I employ condensed milk voluntarily under one condition only. I meet with a few delicate infants, usually from two to ten weeks old, who must be bottle-fed, and for whom it is impossible to modify fresh cows' milk. These children are unable to assimilate the proteids contained in fresh cows' milk in sufficient amount to thrive; and under these circumstances I order the unsweetened or canned condensed milk, preferably the former. A dilution of one-in-twelve will oftentimes be borne without inconvenience, and the child will do well for six or eight weeks, when it will be able to digest a modified fresh cow's milk containing a low percentage of proteids. Why the children are able to digest and assimilate the proteids of condensed milk when those of fresh milk will produce illness, I am unable to explain.

I employ the canned condensed milk because I am obliged to do so in the case of several hundred infants each year. I use it among the very poor, the ignorant, and the careless who bring their children to the dispensary, and for this reason: The very poor cannot afford cows' milk at 6 or 8 cents a quart, neither can they buy refrigerators or ice to properly keep the milk. The ignorant cannot appreciate or follow out the instruction as to the dilution and care of the milk. This class also may be included under the first heading. We occasionally meet with representatives of the careless class in the better walks of life. They insist upon feeding condensed milk to their children against our wishes, their excuse being that such a plan is the easiest to follow. The wives of the American and Irish laborers comprise a goodly number of the indifferent class. The proprietary foods are happily excluded from the uses of the poor, for the reason that they are expensive.

Our only resource the year round with many infants is the sweetened canned condensed milk. It is inexpensive, it will keep sweet several days in hot weather without ice, on account of the added amount of cane sugar, and it is easy of administration. Having this preparation with its imperfections forced upon us, how are we to use it? We have seen from the chemical analysis that the percentage of proteids and fats is low. We would not expect children to be properly nourished on it, and clinically we know that they are not. In the feeding of infants the percentages constituting a proper diet should ever be borne in mind, and as nearly as possible correct formulæ should be worked out on this basis. We must supply to the condensed-milk-fed infant the deficient amounts of fat and proteids. If the parents of the patient are well-to-do, cream may be added in proper proportion to make up the requisite amount of fat. Among dispensary patients, cod-liver oil supplies the deficiency. The dose must vary according to the age, the ability of the child to digest it, and the season of the year. I prescribe from 10 drops to a dessertspoonful, three or four times daily after feeding. As a rule it is taken readily. During the very hot weather the dose must be reduced or the oil discontinued if there are evidences of gastro-intestinal disturbance.

The proportion of proteids will still be low, but they may be increased by adding the condensed milk to a meat broth. One pound of lean beef is boiled in one quart of water until the liquid is reduced to one pint. It matters little what portion of the animal is selected so long as lean muscle-fiber is used. The broth prepared in this way, according to the analysis of John S. Adriance of New York City, contains 0.8 of 1 per cent. of proteids; so that if one part of condensed milk is added to twelve of broth, the mixture will contain 0.5 per cent. of fat, 1.4 per cent. of proteids, and 4 per cent. of sugar. This will answer for a child of three months of age. Fat is supplied by the use of cod-liver oil. When the sixth month is reached, one part of condensed milk may be added to nine of broth. The percentages then will be, approximately, .75 per cent. of fat, 1.7 per cent. of proteids, and 5 per cent. of sugar. This, with cod-liver oil, will answer until the eighth or ninth month, when the critical nursing period will have been passed and barley and oatmeal gruel, with other meal mixtures, may be allowed.

The conclusions arrived at are as follows:

1. In the artificial feeding of infants, always determine as exactly as possible the percentages of the food constituents.

2. Condensed milk alone is an indifferent substitute for mother's milk, no matter what the age of the infant may be.

3. Condensed milk alone should not be given after the third month.

4. Condensed milk, fortified, may be made an acceptable diet for infants; alone, it is a food upon which a certain number of children exist until age or changed conditions allows of a better diet; and inasmuch as there is nothing to take its place among the very poor, its value to them is inestimable.

CLINICAL MEMORANDA.

THREE CASES OF OBSCURE LARYNGEAL DISEASE—TUBERCULOSIS, SYPHILIS, EPITHELIOMA.

BY CHAS. H. KNIGHT, M.D.,
OF NEW YORK.

CASE I. *A Case of Tuberculosis of the Larynx Simulating Malignant Disease.*—A man, about sixty years of age, came to my clinic at the Post-Graduate Hospital in October, 1896, presenting many of the features supposed to be pathognomonic of laryngeal cancer. The left half of the larynx was involved. It was infiltrated and immobile, and a smooth, reddish, sessile tumor projected into the cavity of the larynx from the left ventricular band. There were two or three small, hard, and sensitive glandular swellings at the level of the larynx near the anterior border of the left sternomastoid muscle. The left ala of the thyroid was sensitive to pressure, and the patient complained of spontaneous pain shooting up to the left ear. There was no tuberculous history. I made a provisional diagnosis of malignant disease. Within a few days suspicious pulmonary signs were reported, a little later tubercle bacilli were found in the sputum, and in the course of a week or ten days the right side of the larynx was invaded. Both arytenoids became infiltrated and clubbed, and an ulceration could be seen upon the laryngeal surface of the epiglottis, which itself had become symmetrically thickened and turbanned. The laryngeal picture was then almost typical of tuberculosis. This patient has since died of general tuberculosis. Such an anomalous development of tuberculosis in the larynx as this is extremely misleading, and in a younger subject might encourage unwise surgical intervention, especially if the progress of the disease is less rapid and the exhibition of unmistakable symptoms more tardy.

CASE II. *A Case of Tuberculosis of the Larynx Complicated by Latent Syphilis.*—In September, 1895, a gentleman was sent to me with a diagnosis of pulmonary tuberculosis. He had been losing flesh, having night sweats, and was annoyed by a hacking cough, with considerable expectoration. His voice had been very husky for several weeks. Four years ago this patient had an attack of gonorrhea and an ulcer of the frenum, which healed promptly under calomel powder. No secondary symptoms were ever discovered, and no antisyphilitic internal medication was given. The larynx was rather hyperemic. The arytenoids were distinctly clubbed. A somewhat superficial ulcer involved the left margin of the epiglottis and the adjacent aryepiglottic fold. No tubercle bacilli could be found in the sputum. A month later this patient returned to me with all his symptoms aggravated and with decided extension of the local lesions. Tubercle bacilli were found in numerous specimens of sputum examined. He was advised to go at once to Southern California. Improvement began immediately after his arrival there, but presently he became worse again. In the course of four months an ulceration appeared on the posterior wall of the oropharynx, so suspicious in character that his attending physician put him on mixed treatment. At the same time the ulcerated surfaces in the pharynx and larynx were sprayed with a ten- to fifteen-per-cent. solution of lactic acid. The dose of iodid of potash was gradually increased to 40 grains three times a day, and under this treatment all the symptoms underwent marked amelioration. The ulcers healed, the swelling of the arytenoids subsided, and the voice was gradually restored. At the same time a rapid and surprising improvement in the general condition took place.

At the expiration of a year this patient presented himself to me for examination in apparently perfect health. No traces of his old trouble could be detected, except certain cicatrical bands crossing his posterior pharyngeal wall which were positively characteristic of old syphilis. He has resumed the practice of his profession in the East, and up to the present time has had no recurrence of the symptoms. Several questions difficult to answer are suggested by the foregoing case. They relate to the time and mode of syphilitic infection and to the influence of that accident upon the tuberculous disease. The evidence of the existence of each of these dyscrasiæ seems to be indisputable. There is but little doubt in my own mind that the sore referred to as having occurred in 1894, although very insignificant and of short duration, was a genuine infecting chancre. As often happens in such cases, early secondary symptoms, if they develop, escaped detection because of the very unimportance of the primary lesion. The arrest of the tuberculous process may be fairly attributed to change of climate, but it seems not unreasonable to assume the possibility of an antagonism between the tuberculous and the syphilitic diatheses which might have a mutually modifying influence.

CASE III. *A Case of Epithelioma of the Larynx Disguised by Marked Remission of Symptoms.*—The patient was a lady about forty years of age who came under my observation in April, 1896. Fourteen months before she had noticed an enlarged gland on the right side of her neck, and her voice became husky. She had attacks of violent paroxysmal cough, after which the sputum, which was generally moderate in amount, would be streaked with blood. There was some pain in swallowing, and a constant feeling of discomfort in the region of the larynx. There had been some loss of weight, ten pounds in a year, but no marked decrease of strength. The general condition was on the whole pretty good. Six weeks ago a tumor was discovered springing from the right vocal band. At the time of my examination this tumor, which concealed and seemed to involve all but the anterior third of the right vocal band, was somewhat pale in color, and had an irregular surface. The ventricular band, the aryepiglottic fold, and the epiglottis on the corresponding side, were thickened, and the right side of the larynx was motionless. The left side was normal. I removed a piece of the projecting tumor, under cocain, with Mackenzie's laryngeal forceps, and the specimen was pronounced an epithelioma. The patient was at this time seven-months pregnant, and it was decided to postpone operative interference. After her confinement, which was free from complication, she made very marked improvement. The slight sense of dyspnea, which had previously existed, entirely disappeared. Her voice was regained sufficiently to enable her to sing in a low tone. A few weeks later she had an attack of pleurisy, with effusion on the left side, from which she seems now to have entirely recovered. Her present condition is one of comparative comfort. The laryngeal tumor is reported not to have increased in size very much during the past year. The enlarged cervical glands are still noticeable, but are much smaller than they were a year ago. At times she suffers a great deal of pain in swallowing, and coughs immoderately. There is no fetor to the breath, and the secretions from the larynx are not excessive. When lying in certain positions she suffers some inconvenience from obstruction to respiration, but otherwise she has no dyspnea. Her pain has never been severe enough to require anodynes, except the occasional use of a four-per-cent. solution of cocain as a laryngeal spray. The question of operative interference was left to the decision of the patient herself and of her husband, who is a physician, and the conclusion seems to be that she is quite as well off today as she would have been without a larynx, had she survived the operation.

In spite of the fact that many of us may have had the unhappy experience of being misled on certain occasions by the microscope, these cases served to impress upon me the importance of subjecting all of our laryngeal neoplasms to microscopic examination, more especially those occurring at and after middle life. Otherwise, in most cases, we have no means of making a positive diagnosis of incipient cancer of the larynx. In the absence of definite microscopic testimony, we shall be forced to reach an opinion by exclusion. Late cases are generally characteristic, but the early stages of malignant disease present no objective appearances which may be safely relied upon for diagnosis. The development of the Röntgen ray as a diagnostic resource is awaited with interest. It seems reasonable to expect that it may eventually give us valuable information as to the extent of the infiltration and the limits of a diseased area.

With regard to laryngectomy, I am disposed to class myself with the opponents of *complete* extirpation. When the disease has so far advanced as to demand such radical procedure, the case is well-nigh hopeless. By the time the whole larynx, or a large part of it, is involved, the disease has presumably disseminated itself far beyond the boundaries of any feasible operation. The involvement of glandular structures, remote as well as in proximity to the larynx, renders recurrence at the site of operation or elsewhere almost inevitable. No doubt the statistics of laryngectomy are becoming more favorable with improvement in technical details of the operation and of after-treatment. Nevertheless, it seems to me that in order to reach a just conclusion as regards extirpation of the larynx in a given case, we have to consider another question than that of statistics, namely, the temperament of the individual upon whom it is proposed to operate.

To a person of stolid, phlegmatic disposition, the loss of the larynx is of much less consequence than to one of sensitiveness and refinement. To the latter deprivation of the power of speech becomes almost insupportable, and the kind of speech without a larynx acquired by some of these unfortunates, as in Cohen's famous case, in one more recently reported by Ward,[1] and in several others, or that provided by the various ingenious substitutes for the normal larynx, offers very poor consolation. It has been my misfortune to observe several cases of laryngectomy in which the patient lapsed into a morbid mental condition bordering upon suicidal melancholia. Whenever the question of operative interference arises it would seem wise to take this matter into consideration.

My object in briefly reporting these three cases is first to call renewed attention to the difficulty of making a diagnosis from the clinical history and the objective appearances, and to insist upon the importance of the microscope as an diagnostic adjuvant even in apparently innocent cases; in the second place, to remind you of the possible concurrence of several pathologic conditions; and finally, to protest against indiscriminate operating in malignant disease of the larynx.

A NOTE ON THE PATHOLOGY OF COMPLETE OR ANNULAR PROLAPSE OF THE URETHRAL MUCOUS MEMBRANE IN WOMEN, WITH THE REPORT OF A CASE.

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In a former communication on "Complete or Annular Prolapse of the Urethral Mucous Membrane in Women,"[2] I reported three cases, and stated that the results of the microscopic examination of the last two cases (this unfortunately was omitted in the first) would tend to confirm the opinion that the cases described as "complete prolapse of the urethral mucous membrane" are rarely, if ever, instances of true primary prolapse of this membrane, but that is secondary to some neoplastic change in the membrane, the most usual being, according to the investigations of C. Ruge and Martin, an angioma, In further support of this statement I now report the following case which has recently come under my observation:

Miss G., aged fifty years, a nullipara five years past the menopause, came to me complaining that during the previous six months she had been suffering from intermittent hemorrhages from the genitals. The bleeding on several occasions had been quite profuse, amounting once, in her opinion, to almost a pint. During the intermissions she had noticed a profuse watery, sanious discharge which of late had become very offensive in odor. Urination recently had become more frequent and caused considerable scalding in the neighborhood of the external meatus both during and after the act. For two years she had noticed a slight swelling occupying the orifice of the vulva, but, as it did not give rise to any serious inconvenience, she did not consider it necessary to consult a physician. Recently, however, the tumor had increased in size and her sufferings had become so marked that she was compelled to seek relief.

Examination revealed a tumor about the size of a large English walnut, of deep purple color, projecting between the labia majora and filling up the vulvar orifice. About the center of the tumor at its most projecting point was situated the external orifice of the urethra, widely dilated so that the little finger could be passed through it for the distance of about half an inch. On the posterior aspect, some little distance below the urethral opening, was a small gangrenous area about the size of a dime. The growth was removed in the following manner: A circular incision was made through the mucous membrane around the base of the growth. Then deciding that it would be necessary to remove a portion of the mucous membrane of the urethra also, as the diseased condition affected it, another incision, commencing at the most dependent point of the first and involving only the mucous membrane, was carried up along the anterior wall of the vagina in the long axis of the urethra for the distance of half an inch. The urethra was now dissected out, as in Gersuny's operation for incontinence, almost to the neck of the bladder. The tumor was removed, with about a third of the urethra proper, and the cut surface of the urethral mucous membrane drawn down and fixed externally by means of interrupted sutures of fine silkworm gut. The operation was completed by closing the longitudinal incision in the anterior vaginal wall with several sutures of the same material. A soft rubber catheter was inserted and allowed to remain during the first two days after the operation. The sutures were removed on the seventh day, when complete union was obtained, and the patient left the hospital two weeks later, since which she has had no further trouble.

Microscopic examination of the growth proved it to be an angioma. Its free surface was covered by an epithelium similar in structure to that normally found in this location. From this epithelium somewhat dilated and hypertrophied glands passed down into the subjacent tissues. Beneath the epithelial covering and surrounding the glands was considerable round-celled infiltration of an inflammatory character.

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[1] *Trans. Clin. Soc.*, xxix, 1896.
[2] *Trans. Roy. Acad. Med.*, Irel., vol. ix., p. 304.

INTUSSUSCEPTION IN AN INFANT SIX MONTHS OLD, WITH DEATH IN TWENTY-FOUR HOURS.[1]

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BABY A. was born March 29, 1896. He had but little difficulty in making his entrance into the world, and the only trouble he found in life was that his mother could not supply him with enough to eat. But this lack was repaired by cow's milk, modified by the Rotch formula, and on this food Baby A. steadily gained in size and weight, until an accident occurred which suddenly and tragically put an end to his life.

This accident took place on September 26th, when the baby was just six months old; and it came like a thunder clap from a clear sky. At nine o'clock on the morning of that day, he took his food as usual, about four ounces in amount; at twelve o'clock he had a natural and free evacuation from his bowels; but at two o'clock he commenced to cry as if in pain, though previously playful and contented all day. He cried incessantly about an hour and a half, then vomited freely. He continued to vomit at intervals all the afternoon and evening, and between times appeared to be nauseated and in pain. He refused all food until late in the evening, when he was persuaded to drink part of his bottle of milk; but almost immediately afterward this was ejected.

So the nausea, vomiting, and whimpering continued without other symptoms, until one o'clock on the morning of September 27th, when the baby had a peculiar passage from the bowels. This was the first passage since noon, and was peculiar in that it contained a small amount of blood, considerable water and some flakes of mucus, but no fecal matter. Now for the first time the parents became sufficiently alarmed to summon a physician. I saw the baby about 2 A. M., and was at once shown the napkin containing the bloody discharge. The passage was not large—could not have been over an ounce in amount, and was pale red in color, indicating that only enough blood had intermingled with the watery evacuation to give it a tinge. The baby at that time was apparently not in great pain, but fretful and moaning occasionally, sometimes dropping asleep, sometimes perfectly quiet when awake. He made frequent attempts at vomiting without anything coming up, but there was no straining or tenesmus as if the bowels were inclined to move. His pulse was 140, his temperature per rectum 102½° F.

Look now at the differential diagnosis of this case. Except the bloody passage from the bowel, every symptom spoke of an attack of acute gastric indigestion. The sudden onset with pain, followed by vomiting; the continued retching and nausea, with pain and refusal of food; the moderately elevated temperature and high pulse-rate, were all characteristic of acute indigestion. Furthermore, the history supported this diagnosis; for the last food given and retained, at nine o'clock on the morning of September 26th, was part of the amount prepared nearly twenty-four hours before. The weather at that time was quite hot, and it appeared more than likely that the food had undergone fermentation before the baby took it, and so had caused the symptoms present. On the other hand, the passage containing blood at once created suspicion of intussusception; a suspicion strengthened by the mode of attack—acute onset with pain, followed by vomiting, and with continued pain and nausea as the prominent symptoms. With this suspicion in mind I carefully palpated the abdomen, but could find no tumor, and made digital examination of the rectum, but could detect nothing abnormal there. The diagnosis certainly lay between these two conditions—acute indigestion and acute intussusception; one very common, the other rare; one due to a cause here manifestly present, the other without any cause apparent in the history of the case; one comparatively simple and benign in its course, the other with an outlook most forbidding. Without certainty to guide me on either hand, I accepted the explanation most probable and made a diagnosis of indigestion. I prepared and gave an enema of starch water containing twenty drops of paregoric, with instructions to repeat this in four hours; applied a mustard paste to the abdomen, and ordered all food to be withheld absolutely and no drink to be allowed but egg water.

At nine o'clock the next morning I found to my surprise that the baby was decidedly worse. He had had but little respite from pain, in spite of the opium, and had kept up almost constantly the nausea and retching, without ejecta. There had been no further passage from the bowels, of any sort. His pulse was now too quick and thready to be counted readily; his temperature per rectum was 105½° F.; his eyes were sunken and his pallor marked. Again careful examination by abdomen and rectum were made, but no tumor could be detected. Still of the opinion that the case was one of indigestion, I explained the alarming symptoms to myself as those of intoxication, due to the fermenting and poisonous milk locked up in the bowels. I have seen similar effects produced by this cause before and since this case. Acting on this theory, I at once changed my plan of treatment, stopping the paregoric and ordering instead one-tenth of a grain of calomel every hour until the bowels moved. At the same time, realizing the gravity of the situation, I asked for consultation, and permission being granted, agreed to see the baby again with a consultant in the afternoon.

It was one o'clock before I returned to my office, and there I found the father of the infant waiting for me. He stated that the baby had just had another bloody passage, and in proof showed me the napkin he had brought along. Convinced by this that the case after all must be one of intussusception, I hastened back with him to his home. There had been a third passage of blood and mucus, without fecal matter, just before we arrived, and when we reached the house the baby's condition was critical; the pulse was imperceptible and the countenance showed that death was imminent. Even at this time I could make out no tumor by abdomen or rectum, but the repeated bloody discharges from the bowel left no doubt as to the diagnosis. Faithful efforts were now made to reduce the intussusception by high injections into the bowel, but it was too late. The baby died at 2:45 P. M., barely twenty-four hours after he was taken ill.

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[1] Read before the San Francisco County Medical Society, April 13, 1897.

Permission to open the abdomen was granted by the parents, and I made this partial autopsy next day at noon. I found the ileum pushed down into the cecum, through the ileocecal valve, for three inches of its extent, and so firmly caught there that considerable force was required to release it. Above the point of obstruction there was a quantity of thin, pearly fluid, containing flakes of coagulated casein.

Intussusception is not infrequent in infancy; in fact, statistics show that of all cases occurring under ten years of age, one-half occur between the fourth and the ninth months of life. This is explained by the anatomic peculiarities of the intestine in infancy; its walls are thin and lax and its mesentery flabby so that more motion is allowed than in adult life. Yet these conditions after all act only as a predisposing cause, and the exciting cause is usually obscure. Pre-existing intestinal disorders accompanied by straining, such as constipation or dysentery, are apt to bring on intussusception; but the great majority of cases, like the one reported, occur in infants whose previous health was apparently perfect. The only explanation is therefore this: because the intestinal tube is lax and flabby, it is easy for one part to be carried down by peristaltic action inside the part beyond, especially when the part beyond is wider in its lumen, as at the junction of small and large intestine; and about seventy-five per cent. of the cases of intussusception in infants occur at the ileocecal valve. In the case reported it seems likely that the food had undergone fermentation before its ingestion, as explained; and that this irritating food, by increasing the force of peristaltic movements, was the immediate cause of the accident. No doubt indigestible food, acting as an irritant, and so setting up unusual peristaltic waves, is a common cause of intussusception in infants.

The prognosis of this affection in infants is always grave in the extreme. The most favorable statistics place the mortality in cases under one year of age at sixty per cent. It is unusual, however, for death to occur so early as in the case here reported. In forty-nine cases collected by J. Lewis Smith and recorded in his work on "Diseases of Children," only two died in twenty-four hours from the onset; and out of ninety-two fatal cases collected by L. Emmet Holt and very recently reported in his work on "Diseases of Children," there were only two that died in twenty-four hours. The average duration of fatal cases is three days, and the great majority die within a week.

Thus it is seen that intussusception in infants generally occurs without warning and is terrible in the suddenness with which it kills. What is to be done for it must therefore be done quickly, and this implies prompt recognition of the trouble. The typical and diagnostic symptom is the passage from the bowel of bloody liquid and mucus, containing no fecal matter. Another time, on the first appearance of such a discharge from an infant's bowels, with a history of vomiting and pain preceding, I shall at once treat the case for intussusception, without waiting for a tumor, or tenesmus or other classical signs. The only treatment of any use is mechanical. The invagination must be released by pressure from below. This can frequently be accomplished by injections through the rectum; but if these fail, the only resort is laparotomy and manual reposition.

Injection is to be made with a fountain syringe and warm water. The infant should be anesthetized, the hips elevated 45° and the syringe-bag raised well above the body to secure sufficient pressure. It has been estimated that the elevation of the receptacle each two and a half feet will add one pound pressure to each square inch. If the bag is held five feet high, as usually advised, a pressure will thus be exerted on the bowel of two pounds to the square inch. This pressure should be kept up for twenty to thirty minutes, the fluid meanwhile being retained in the bowel by pressing the soft parts tightly around the syringe-nozzle. If not successful the first time, it should be repeated once or twice, but not more, after allowing an hour's interval for rest. There is nothing, as a rule, to show at once that reduction has been effected; only by the occurrence of a normal evacuation from the bowels shortly after injection and by relief of the general symptoms, is proof furnished that the obstruction has been removed.

Laparotomy is indicated as soon as a thorough trial of reduction by injections has proven unsuccessful. The history of the case reported shows the necessity for despatch. Hours are precious, and no time should be lost in resorting to operation when other measures have failed. The earlier it is performed, the greater the hope that it will succeed. But the most distressing obstacle in the way of success by any method of treatment, is the failure to make a correct diagnosis until it is too late.

MEDICAL PROGRESS.

Manual Rectification of Faulty Head Positions.—FRY (*Am. Jour. of Obstetrics*, March, 1897), in a paper read before the Washington Obstetrical and Gynecological Society, advocates in the strongest terms the manual rectification of faulty head positions. "Let us recognize the fact," he says, "that tardy labors can be terminated speedily and successfully by other means than by forceps."

Special reference is made to cases of occipito-posterior and other faulty head positions, where the woman is suffering from impaired vitality or chronic disease, in which case a prolonged second stage, with forcible contractions, is much to be dreaded. Numerous rules are given for the rectification of the various malpositions, differing according to the degree of descent of the head, *viz.*, above the superior strait, in the pelvis, or at the outlet. Certain rules are common to all cases. The patient should be anesthetized, placed on the edge of the bed, with thighs and legs flexed, thorough aseptic and antiseptic precautions observed, and the hand introduced during the absence of a contraction. All manipulations above the brim must be accomplished in the interval between the contractions, while those in the pelvis, or at the outlet, during a contraction.

1. When above the brim or slightly engaged:

In occipito-posterior positions the head should be raised by upward pressure on the forehead, which also causes flexion, then grasped and rotated forward.

In cases with small heads and roomy pelves it is possible sometimes to change occipito-posterior into mento-anterior, and mento-posterior into occipito-anterior positions. Brow and transverse presentations are treated on the same principle. Face presentations are changed by raising the head, pushing up the forehead, and drawing down the occiput.

2. When within the pelvis:

Occipito-posterior or face presentations, by the aid of anesthesia and posture, either the knee-chest or Trendelenburg, the head may be disengaged and treated in the same way as above. In desperate cases he advises symphyseotomy to allow room for the necessary maneuvers to change it into a vertex position.

3. When at the outlet:

The manipulations are the same as when well down in the pelvic cavity, though with much greater hopes of success.

Surgical Intervention in Peritonitis Occurring in Typhoid Fever.—Before the Academy of Medicine, Paris, DIEULAFOY, as reported in the *Gaz. Hebdom. de Méd. et de Chir.*, rejects the division of peritonitis occurring in typhoid fever into peritonitis by *perforation* and by *propagation*. He denies the existence of the latter, considering that sufficiently careful search will in every case reveal some minute fissure in the intestinal wall, a ruptured infected gland, possibly a ruptured gall-bladder, or a perforation of the appendix vermiformis. This last cause, which is by no means so rare as one might suppose (15 cases in 133 autopsies for perforation in typhoid, according to Nacke), is not the ordinary appendicitis with rupture, but is a true typhoid perforation due to alteration of the lymph-follicles of the appendix, just as perforation of the small intestine results from an exactly similar alteration of the lymphoid tissue in Peyer's placques.

Besides this true typhoid appendicitis, there also occurs in connection with typhoid fever the usual form of appendicitis, which may be called a *paratyphoid* appendicitis, and which has not been sufficiently studied, but which is marked by an acute attack, and which has the various well-known terminations in localized or general suppuration.

The outlook for these cases of perforative appendicitis, both typhoid and paratyphoid, is much brighter than that of intestinal perforation. The chief point in differentiating them is the fact that they cause a rise of temperature, and not the sudden drop which occurs in intestinal perforation. Dieulafoy also places reliance upon the occurrence of hiccough as a symptom of commencing peritonitis, especially if it first makes its appearance in the third week with abdominal pain, nausea, and an increased meteorism. There are, however, a few rare cases in which hiccough occurs in typhoid fever as a purely nervous phenomenon independent of peritonitis.

If perforation occurs, measures for relief such as ice, opium, etc., are usually of no avail. In considering the advisability of surgical treatment, it is first necessary to separate the appendical from the intestinal cases. In the former the results of operation are excellent; in the latter the diagnosis is often obscure. One cannot always be sure perforation has occurred; yet delay of a day or so, if it has occurred, will take away what little chance for recovery there may be. Statistics so far teach little. Lejars collected 25 cases operated upon with 6 recoveries, but it is doubtful if 3 of these are properly considered under the subject of the discussion. One patient operated upon by Routier lived some days and then died from a fresh perforation. Autopsy showed that the sutured perforation had cicatrized, so that surgical interference is capable of cure if no new perforation supervenes.

Chronic Bronchitis of Children Treated Surgically.—CHAUMIER says (*La Presse Méd.*, April 24, 1897) that the chronic bronchitis which is so often seen in children is due either to adenoids in the nasopharynx or to a chronic catarrh of that region without the vegetations. The treatment indicated is, therefore, ablation of the tonsils, and destruction of the adenoids with a galvanocautery. Granulations should be scraped and burned away.

THERAPEUTIC NOTES.

To Allay Vomiting in Cholera Morbus.—

℞	Creosoti	aa . . m. ii
	Ac. hydrocyanici dil.	
	Mucilag. acaciæ	f. ʒ ss
	Aquæ	q.s. ad ℥ i.

M. S. One dose.—*Packard.*

For the Headache Dependent upon Ovarian Disease.—

℞	Ammonii bromidi . . .	ʒ vi
	Ext. hydrastis fl. . . .	℥ ss
	Tr. gentian comp. . . .	℥ iss
	Aquæ	℥ iv.

M. Sig. A dessertspoonful three times a day.—*Sinkler.*

A Case of Tetanus Treated with Subcutaneous Injections of Corrosive Sublimate—Recovery.—In a marked case of tetanus in a boy aged nine, HENDLEY (*Brit. Med. Jour.*, January, 1897) after trying all the various methods of treatment, injected subcutaneously into the patient's buttock one-tenth-grain doses of corrosive sublimate, twice daily. After the first two injections the spasms markedly decreased in both frequency and severity, and after eleven doses the paroxysms had entirely ceased, and the recovery took place fairly rapidly. Small doses of chloral hydrate were also used throughout the disease.

Inhalation of Formalin in Catarrh and Other Diseases of the Respiratory Tract.—According to GREEN (*Brit. Med. Jour.*, January 23, 1897) the most rational treatment of catarrh, and many other diseases of the respiratory tract, is by the inhalation of germicidal remedies. The best results have been obtained with the vapor of formalin; one or two drops being placed inside a Jeffery's respirator. Green also strongly advises its use in the early stages of tuberculous disease of the lungs, together with the ordinary tonic, hygenic and dietetic treatment. Under its use he noted a decided improvement in the patient's condition, and a marked decrease in the tubercule bacilli, and other bacteria in the sputum. For inhalation in acute cases the formalin should be diluted with water as the undiluted vapor is too stimulating.

The Value of Sterilized Milk.—It is claimed by scientists that the sterilization of milk not only destroys the pathogenic bacteria but also many beneficent micro-organisms. BARTON (*Brit. Med. Jour.*) thinks that in view of the enormous saving of infant life since the introduction of milk sterilization an opposite view should be taken. After carefully studying the subject he makes the following statement:

1. Completely sterilized milk, if administered without any fresh food, will undoubtedly sooner or later produce scurvy.
2. Milk that is raised to the boiling point, or better, to within two degrees of the boiling point, and maintained there from five to ten minutes, is "comparatively" sterilized, and will never produce scurvy, and is almost free from pathogenic organisms.
3. Completely sterilized milk, if administered at once in perfectly clean bottles, spoons, or cups, can be relied upon as being free from any pathogenic micro-organisms.
4. The heating of milk alters very little, if at all, its nourishing qualities.
5. All kinds of sterilized milk, if free from added chemicals, can become foul as quickly, if not more quickly, than ordinary fresh milk.
6. All sterilized milk that is put into hermetically sealed vessels, and which can keep fresh in them for many days, will produce scurvy unless some fresh food is administered daily.
7. Milk that is boiled directly over a fire will undoubtedly cause constipation. If the milk be placed in a vessel which stands in another vessel containing water, and the water be brought to the boiling point, its antiscorbutic properties are not lost, and it does not cause constipation.

Plea for Less Restricted Diet in Typhoid Fever.—To mitigate the evils of extreme emaciation, feebleness, and prolonged disablement, BARRS (*Brit. Med. Jour.*, January, 1897) urges a diet of solid food whenever the patient is able to take it and expresses a desire for it, even if the temperature curve is above the normal and the bowels are acting too frequently. If the stomach is digesting, the proper kind of solid food will reach the typhoid lesions in the same state of fluidity as would milk; if the stomach is not capable of digesting simple solid food, the patient will have no appetite, and it would be foolish and cruel to force solids upon him.

He believes a majority of typhoid patients die from cardiac failure, lung complications, and other devastating effects of general infection, against which the patient can set only such powers of resistance as he possesses, and which will be more or less effectual according as his general nutrition is maintained by good food. The conditions for healing in the small intestines are the same as for any of the external parts of the body, and no surgeon would expect to see wounds undergo repair in the shortest possible time in a patient living on fluid diet alone.

The Uses of Suppositories in Children.—Owing to the sensitiveness of the digestive tract in children, and the ease with which its condition may be disturbed by medication, a writer in *La Médicine Modérne*, April 28, 1897, makes a plea for the more extensive use of medicated rectal suppositories. The medicine in these suppositories must be in a state capable of rapid and complete absorption, and the vehicle also must be considered. Cocoa butter does not remain sufficiently long *in situ*. The ideal vehicle is found in a mixture of gelatin and glycerin, recommended by Chaumel. To take a practical illustration: In the case of a nervous, excited child, a suppository containing cocain or antipyrin is introduced, and in a short time its calming antispasmodic effect is produced—both systemically and locally at a portion of the intestinal tract where irritation often exists—and without disturbing in the least degree the stomach and intestine.

Kryofin—A new Antipyretic.—In the *Deut. Med. Wochenschrift* for April 22, 1897, EICHHORST describes his experiments with a new antipyretic called kryofin. Chemically, this drug is closely allied to phenacetin. It occurs as white, odorless, tasteless crystals, soluble in 52 parts of boiling and 600 parts of cold water. The solution has a sharp, bitter taste. The usual dose is 7.5 grains, and the antipyretic effects of this amount are greater than those obtained by 15 grains of phenacetin. No unpleasant symptoms have been observed to follow its use. In addition to its antipyretic action, kryofin has been found to have an analgesic power, and is used with benefit in sciatica and in alcoholic neuritis. In acute and chronic articular rheumatism it failed to relieve the pains.

A Physician's Method of Inducing Sleep.—In the *Chicago Medical Recorder* for April, 1897, LEARNED tells how he has been able to overcome insomnia. The respirations are reduced from 18 to about 12 per minute, made full, deep, and regular, and the attention is concentrated upon them. During this time the head is raised from the pillow a half inch or so and kept in that position until the sustaining muscles are exhausted. This usually occurs after fifteen or twenty respirations. The head is then lowered, the muscles of one leg made rigid, and the foot raised. When the leg becomes tired the same process is repeated with its fellow, the respiratory counting being kept up. The body is then turned on the back or the other side, and without loss of time head and feet are elevated as before. In a short time fatigue becomes so well marked that the brain is glad to "let go" and sleep ensues.

This method has one drawback. It is a continuous effort and is, therefore, not attractive for the indolent. To be successful no rest must be allowed at changes of position.

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SATURDAY, JUNE 5, 1897.

THE SEMICENTENNIAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

IT has been said that for a nation to feel that it has a past and a history is a wonderful encouragement to the growth of its moral forces. What is true of nations is true also of associations. The American Medical Association has now reached and passed the golden milestone of its existence. That it has a past and a history of which its members may be justly proud was convincingly presented in the brilliant address of the President, Dr. Senn.

Great achievements and a noble record, however, increase the responsibility of the present. Each annual meeting is an epoch-making event in the history of the Association, and it therefore becomes a pertinent question to inquire what this semicentennial meeting has contributed that is worthy of the organization and of the event. Naturally, the anniversary feature has been prominent. It was a time for reminiscence, for mutual congratulation, for recalling the achievements of the past and forecasting the future. Much time was spent in this agreeable way, and with apparent satisfaction. Dr. Senn presented an exalted picture of the American medical education of the future, and of the rapidly improving institutions for medical education that were destined, even in this generation, to become the finest in the world and to attract students from nations now supposed to be the centers of medical progress. In all fairness, his prediction seems to find justification in the tendency among rival schools to consolidate their resources and in the generous appropriation of large sums of money to build, equip, and endow pathologic and bacteriologic laboratories.

Dr. Flint's Address on Medicine was a thoroughly scientific paper, and a vigorous reminder of the fact that the Association numbered in its membership men capable of conducting the most original scientific investigations and making important physiologic discoveries in unknown fields. It will doubtless prove somewhat of a surprise to our German friends to learn that they have but recently been rediscovering a physiologic product originally discovered and named by an American thirty-five years ago. The importance of consulting American medical literature was thereby also emphasized.

The brilliant contributions of American Surgery to the world's storehouse of knowledge was graphically portrayed by Dr. Keen in the Address on Surgery—and the presence of the venerable founder of the Association Dr. N. S. Davis and his active participation in the anniversary proceedings was a feature of unusual interest and suggested the thought that the sturdy founder typified the stanch material of which the Association was composed.

The Rush Monument Fund now seems in a fair way of being completed in a reasonable time. Small contributions from the many is far better than larger subscriptions by a few. As Dr. Wood said in his eloquent appeal for opposition to the Antivivisection bill now before Congress, what is needed is individual personal effort on the part of the humblest member of the profession and the object is accomplished. Set the machinery in motion to promote this in State, county, and town societies and there is no reason why the complete fund shall not be realized before the next annual meeting.

The attendance was greater than of any previous meeting in the history of the Association and the interest manifested in the scientific and public exercises was gratifying to a high degree. Philadelphia surpassed herself in the hospitality extended, and her guests were made to feel that she is indeed a city "which has the minimum of tenements and the maximum of homes exhaling an air of hospitality.'' Luncheons, receptions, and dinners abounded on every day and on every hand. Not the least appreciated among the entertainments was the theater-party given by the publishers, Messrs. Lea Bros. & Co., on Thursday evening, the size of which was limited only by the seating capacity of the theater. For a period covering four generations it has been the privilege of this house to enjoy the closest relations with the members of the medical profession. It is needless to say that the *entente cordiale* has at least not been lessened by this act of generous hospitality.

THE CONTROL OF VENEREAL DISEASES.

The increase of gonorrhea and syphilis among the British troops in India has recently been noted in these columns. How the problem presented will be dealt with by the British Government does not yet appear, but the question is exciting continued interest both in the lay and medical press, and those who are strongest in their opposition to the Contagious Diseases Acts still admit the necessity of some kind of remedial legislation. As stated in a previous article their objection to this law aside from sentiment is based upon the fact that the most careful examintion of a woman sometimes fails to show her capacity as a source of infection. It is also suggested that when the number of prostitutes is greatly reduced by the retention in hospital of those found to be contagious upon examination, disease among the men increases because the women receive so many in one night that they infect each other through the medium of her person even though she herself escapes contamination. To these objections must be added the great danger of clandestine prostitution which exists even under the most perfect legal system, and to which is ascribed a large part of the cases of syphilis which occur in Paris, Berlin, and other cities, where prostitutes are registered and periodically inspected.

Notwithstanding these objections to governmental regulation the fact remains that venereal disease is many times more prevalent in the British Army than it is in any of the Continental armies where this system is the rule. Nor can this be explained by saying that the general health of the soldier has been neglected. Special attention has been given to athletics, exercise, recreation, etc.—in short to the development and maintenance of a strong physical and moral condition of the army. General sickness and drunkenness have decreased while venereal diseases have increased. While agreeing with the advocates of official inspection to the extent of regarding syphilis and gonorrhea in the light of contagious diseases, and admitting the desirability of preventing those afflicted with these troubles from communicating them to others, it is impossible to believe in the light of past and present experience that inspection and regulation will accomplish all that is desired. Two remedies alone seem able to remove this scourge. One is the absolute prohibition of women within the camp area—a remedy so drastic is not likely to be advocated in any army, least of all in a British army; for whatever may be said of the religious character of the English people, among the men in the classes from which the soldiers are drawn, morality is not a strong point. Still this plan would only put the men in the army upon the same footing as the men in the navy during long cruises.

The other remedy is to allow a soldier to marry and take his wife with him as far as circumstances will permit. This would necessitate a great increase in the pay roll, would very nearly double, apparently, the expense to India of English occupation, and for financial reasons the plan probably stands absolutely no chance of adoption. Still, it may be worthy of careful consideration whether it will not be cheaper for the English nation to submit to additional expense than be overwhelmed by this wave of venereal disease which threatens to spread over England through the infecting agency of her returning soldiery. Whether other considerations would render it impracticable it is impossible to say. Certainly matrimony has not prevented men from rendering acceptable service as soldiers in time of war and, *a priori*, the same may be true in time of peace.

ECHOES AND NEWS.

Smallpox in New York.—The report of smallpox since the outbreaks on March 1st records forty-six cases.

Skiagraphs Not Accepted as Evidence in Court.—Judge Hutchinson refused recently to permit a series of skiagraphs to be used as evidence in a damage suit on trial in his court.

Queen Victoria Vaccinated.—Among the many interesting experiences of Queen Victoria recalled by the approaching celebration is the fact that she was the first member of the English royal family to be vaccinated.

Illinois Vaccination Bill Killed.—By striking out the enacting clause, by a vote of 27 to 10, the Senate of the Illinois Legislature killed the bill providing for the compulsory vaccination of school children in that State.

Women Receive Medical Diplomas.—The twenty-ninth annual commencement of the Woman's Medical College of the New York Infirmary for Women and Children was held May 27th. Sixteen young women were graduated.

Medical Victims of the Paris Disaster.—Of the four men who lost their lives in the disaster at the Bazar de la Charité two were members of the medical profession. At the request of the Academy of Medicine a solemn requiem service was held at the Madeleine on May 15th for the doctors and wives and children of medical men—seven in all—who perished.

Extraordinary Bone Grafting.—A case of bone grafting is reported at one of the hospitals of Buffalo, N. Y., in which five inches of a live sheep's bone has been inserted in a man's leg to replace part of the tibia which had been crushed and destroyed in an accident. The process of attachment and growth is being watched with no little interest through the instrumentality of the fluoroscope.

The Case of Beatty versus Cullingworth.—It is announced that this case is to be re-opened by an appeal to the House of Lords. In commenting on this the *Medical Press* says: "This step is much to be regretted, and the wisdom of those who are finding the money for this further litigation is open to serious adverse criticism. It may be doubted if any single occurrence during the last generation has done more than this trial to strain the amicable relations that should exist between the medical profession and the nursing community."

Medical School Inspection in New York.—The necessity for this work is constantly attested in the weekly reports of the inspectors. The following report has been made for the week ending May 21st. Out of 4510 male and female children examined in the primary departments of grammar schools, primary schools, parochial schools, American Female Guardian Society, and Children's Aid Society, 450 were excluded. There were 5 cases of measles, 8 of diphtheria, 2 of scarlet fever, 1 whooping-cough, 7 mumps, 44 contagious eye diseases, 354 parasitic diseases of the head and body, 4 of chicken-pox, and 17 of skin diseases.

Roll of the University-Bellevue Hospital Medical College Completed.—The New York University Council, at a special meeting held May 26th, eighteen members being present, completed the roll of the professorships of the consolidated medical college by the election to full professorships in the governing Faculty of Dr. E. G. Janeway in medicine and Dr. Frederick S. Dennis in surgery. Dr. A. Flint, Jr., was made Adjunct Professor of Obstetrics and Dr. G. D. Stewart Adjunct Professor of Anatomy. The roll of the governing Faculty now contains twenty-one members, while the clinical, emeritus, and assistant professorships number twenty-five.

To Protect School Children's Eyes.—The New York Board of Health, in conjunction with the Board of Education, is about to take practical action to prevent the increase of nearsightedness among school children. It is proposed to appoint a corps of twelve trained oculists, each of whom shall look after a given school district. Their duties will be to examine and watch each child and pass upon its sight. Those with good sight will be given rear seats in the class rooms, and those with poor eyes, places where they will not have to strain to see the blackboards, maps, etc. The arrangement of these and the proper lighting of school rooms will be the objects of their attention.

Children in Asylums,—James O. Fanning, the inspector of the State Board of Charities, has submitted a report to the Board of Inspection of the twenty institutions in the Eastern Inspection District. The purpose of the inquiry was to ascertain the cause of commitment, the reason, if any, for long detention, and, when possible and proper, to secure removal to the care and custody of parents, relatives, or friends, and to inquire into the family history of the children committed to the institutions. The inspectors made 133 visits to institutions, 614 visits to families, interviewed 1579 children, and has effected so far the discharge of 302. The number of removals represents a decrease of about $600 per week in the expenditures of the municipalities named for the support of dependents.

Water in Chicago Schools.—For the first time in over seven weeks the city water was allowed to be used in the public schools of Chicago, it having been shut off by the Board of Health because of its bad condition. It has not improved, but the demand for it became so insistent that the board had to comply. The Health Commissioner declines, however, to take responsibility for the act. His board had ordered the school hydrants equipped with filters, but the Board of Education had refused to buy them, deeming filters of no protection against germs. Then the water was ordered boiled, but the Board of Education refused to do this, because it could not afford the expense. Then the Board of Health shut the water off to the serious inconvenience of the pupils. It has been obliged to yield at last.

Lord Lister.—The British journals are full of accounts of Lord Lister's many honors. One speaks with great satisfaction of the excellence of his maiden speech in the House of Lords, another of his dining with her Majesty the Queen at Windsor Castle, and all of them mention the unique banquet which was to occur on May 26th at the Café Royal, London, at which Lord Lister was to be entertained by all the house surgeons, clinical clerks, and dressers who worked under him at Glasgow, Edinburgh, and London. As an instance of the interest taken in the event it is reported that a former dresser has come all the way from British Guiana to be present, and the oldest of Lister's house surgeons, Dr. Ramsey of Torquay, aged seventy-three, will be present. The father of antiseptic surgery is evidently being appreciated.

The Skeleton of Professor Cope.—Besides leaving his paleontologic collections and most of his fortune to the University of Pennsylvania and its allied institutions, the late Professor Edward Drinker Cope took care that death should not end the usefulness to science of even his mortal tenement. In accordance with the provisions of his will, only a part of his body was cremated. His brain is to be preserved in the Wister Museum of the university, and in the same place his skeleton will silently continue the instruction to which Professor Cope's life was devoted. The relics of the departed teacher are to be prepared by men who knew him well and often worked with him, and near them in the museum the ashes of his flesh will be preserved in an urn standing beside those containing all that was mortal of two other great men devoted to scientific pursuits—Professor Leidy and Professor Ryder.

The Congress at Moscow.—In connection with the International Medical Congress at Moscow a two-weeks' excursion has been arranged to the Caucasus visiting the celebrated mineral baths of which Kislovodsk is the center, and traversing a region notable for its fine scenery. A nominal fee of thirty dollars will be charged. It is announced that guests of the Congress, including ladies, will pay no admission fee but they will not be entitled to the free railway passes from the frontier stations on the Russian lines, accorded to members. Visiting members may obtain hotel accommodations in advance by applying to Professor Chervinsky of Moscow. It is estimated that the cost of rooms will be about one dollar and twenty-five cents per day. A committee of ladies of Moscow has been formed for the purpose of securing comfort and entertainment for the ladies accompanying the members of the Congress.

Chewing Gum Is Interdicted.—In addition to the injurious effects produced by the excessive overstimulation of the salivary glands occasioned by the habit of gum chewing, the act itself is a breach of good manners. Anent the reprimand administered by one of New York's magistrates to the attending policemen for chewing gum in the court, the *Sun* says: "Gum-chewing, although it isn't positively offensive, like tobacco spitting, is the height of vulgarity. It may be tolerable for athletes who have special need of working their salivary glands in order to keep their mouths moist; or it may serve to soothe the nerves of a billiard player in undergoing the strain of a great match. But it distorts the face, gives it a slatternly and careless aspect, and offends the rule requiring people to finish their dinner before rising from the table. Besides, it very often causes the emission of a nasty sound from the gnashing jaws."

Statistics of New York Dispensaries.—In a report recently submitted to the State Board of Charities Dr. Stephen Smith presented the following statistics: "The number of dispensaries in this city connected with hospitals are 31; with churches or missions, 9; having governing boards, 58; under private control, 7; total, 105. In the cases of those with governing boards, which are supposed to exercise a strict supervision, there are only 13 whose boards have made daily visits. The boards of 11 have made weekly visits, of 7 monthly visits, of 2 annual visits, while the board of one has visited only four times since incorporation in 1889, of another only five times since incorporation in 1869, and of another, never. Only 47 have a regular board of officers, 20 have only a president, 2 have no officers whatever. In 67 medical or surgical aid is entirely free, in 16 the intention is to charge a small fee, in 8 aid is accounted paid for by benefit to the students present. In only 7 dispensaries is any record of the names and addresses of patients kept, and in only 33 any record of diagnosis and treatment, while in 21 no record of any kind is kept. The worthiness of a case is decided by investigation (generally superficial) at 44 dispensaries, by mere appearance at 18, and at 6 no questions are asked. At 7 patients are charged ten cents or more, if able to pay; at 3 some charge is made for surgical aid, at 11 something is charged for medicines and dressings, at 2 something for board (if able to pay), at 39 from ten to fifty cents for medicines, and at 3 payments are voluntary. The medical staff renders gratuitous service at 51, at 2 the members receive board and lodging, at 15 they are paid from $25 a month to $1500 a year. Thirty-seven dispensaries have from 1 to 10 medical attendants, 28 from 10 to 25, 6 from 25 to 50, 2 from 100 to 165, and 1, none. The trustees appoint the medical attendants in 24 dispensaries, individuals in 9, and medical boards in only 18. One dispensary replied that the question on this point was a 'fool question.' At 3 mission dispensaries the medical attendants are appointed by the minister in charge. Examination precedes appointment in only 3 institutions. In 10 the number of persons treated ranges from 80 to 100, in 1 from 500 to 1000, in 28 from 1000 to 5000, in 20 from 5000 to 55,000, and the total number treated in 1895 was 837,971."

CORRESPONDENCE.

THE INITIAL DOSE OF TUBERCULIN.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: In an article written by me which appeared in the MEDICAL NEWS, May 29, 1897, on the tuberculin test, I am made, through a typographic error, to say "The first injection should not exceed five milligrams, whereas the text should read "The first injection should not exceed five-tenths of a milligram."

As the use of a small initial dose is an essential feature of the method I have employed, and as the injection of so large an initial dose as five milligrams might result in producing very unpleasant symptoms, may I ask you to correct in your next issue this unfortunate mistake?

In order to make the matter plain, allow me also to repeat the following sentence from the original article: "The adoption of an initial dose so small as to guard against the possibility of producing violent reactionary symptoms, and a graded increase of subsequent doses within such quantities as are known never to produce reaction in healthy individuals would seem to afford the best protection against unpleasant results and misleading evidence."

Very truly yours,
E. L. TRUDEAU.

SARANAC LAKE, May 30, 1897.

OUR VIENNA LETTER.

[From our Special Correspondent.]

SERUMTHERAPY OF DIPHTHERIA IN HUNGARY—A CASE OF COMPLETE TRANSPOSITION OF THE VISCERA, AND A CLINICAL DIAGNOSIS OF THE CONDITION—THE COINCIDENCE OF THREE CASES OF COMPLETE TRANSPOSITION — CONTINENTAL AND AMERICAN NURSING AND NURSES—THE SIGNIFICANCE OF A PHYSICIAN'S PHOTOGRAPH.

VIENNA, May 15, 1897.

THE recently published official statistics of serum-therapy of diphtheria in Hungary seem of special interest, coming as they do from a country where the influence of a preconceived judgment, for national or other reasons, was not at work to make the result conform to expectations. Toward the end of 1895 the government decided that all cases of diphtheria treated under its supervision, whether in hospitals or in district practice, should have the advantage of serum-therapy. Some 10,000 cases were treated in this way before February of this year, with a total mortality of 19 per cent. The mortality in Hungary from this disease during the year 1893 was 43 per cent., and during 1894, 43.7 per cent., the statistics being compiled from over 40,000 reported cases. The recent statistics are collected from about ten different districts. A comparison of the results obtained in each of the districts shows that there were no striking differences in the death-rate, but a corresponding improvement as to mortality all over the country. The mortality percentage varies only about 6 per cent. in districts widely separated, and whose inhabitants are living under extremely different circumstances. The highest mortality recorded, 27 per cent., comes, as might be expected and as has been the case everywhere, from the hospitals. It is in the hospitals that the patients are treated who, as a rule, before the attack have lived under the poorest and most unfavorable circumstances, in which the diagnosis has been longest delayed, and in which the treatment could only be applied when secondary infection had already taken place. It is to the statistics of such cases that the opponents of serum-therapy refer in order to justify there opposition. Even with all these disadvantages the serum treatment has effected a notable decrease in the death-rate of hospital cases.

Most of medical Vienna has been amused during the past week at the clinical diagnosis of a case in which the autopsy revealed complete transposition of the viscera. Death was the result of gangrene of the lung. The diagnosis had been made with a great deal of care, and the case had even been the subject of a demonstration at one of the special post-graduate clinics. The heart was very weak, and considerably diseased, and the apex beat was undiscoverable. The presence of huge gangrenous cavities, and of deeply infiltrated surrounding lung tissue, obscured the real condition of affairs in the thorax. The somewhat enlarged spleen was taken for a cirrhotic liver, there being a history of alcoholism, while the almost normal liver was made out to be a much enlarged spleen. The diagnosis in faultless Latin, *hepatitis cirrhotica tumor lienis chronicus*, doubtless sounded better at the bedside than it did when reread in the cold, unsympathetic atmosphere of the section room.

The tendency of even the rarer anomalies to turn up in groups, illustrative, I suppose, of the "innate perversity of inanimate thing," is exemplified by the occurrence of three specimens of complete visceral transposition in the autopsy-room within six weeks. In two of the cases it was noted that the right testicle hung lower than the left, so that the explanation of this peculiarity, for which so many theories have been formulated, would seem to be absolutely dependent on the general conformation and position of the abdominal organs. The appendices on the left would have puzzled an unsuspecting and suddenly summoned medical man in case of inflammation of that highly susceptible evolutionary remnant. As there do not seem to be many cases recorded in literature of removal of the appendix from the left, perhaps some of its susceptibility is in abeyance in its unusual situation. In one of the cases the clinical history seems to show that the subject was right handed. The theory that right handedness generally is due to the greater weight of organs on the right side would seem to require left handedness in these cases. The exceptional "left hander" would certainly help to prove the rule, in the true sense of that much-abused aphorism, if he would but fortuitously and persistently turn up in these instances.

The discussion occasioned some months ago by the appearance in a prominent English magazine of a not very favorable criticism of English nurses, would lead the American abroad to compare Continental nursing and nurses with the English and our own. After all the modern American trained nurse occupies about the same position as her English professional sister. If anything, American nurses come from a better class, have a better preliminary education, and are even more especially trained, and consequently are more trusted and more thought of. Continental nurses, if one may speak in general after having seen French, Italian, and Austrian nurses, are, as a class, not at all what American medical experience of the last few years has made us acquainted with. The work does not seem to be taken up as a profession by those engaged in it as it is with us, and there is a consequent lack of interest in acquiring its necessary details. It is taken up casually because nothing better presents itself at the moment, to be dropped at the first opportunity. Very little serious organized effort seems to be expended in training them in their duties, and they occupy about the position of better-class hospital servants. The contrast is very marked in the position occupied here by the nurse and that which we are accustomed to, and I do not think that it is calculated to make American physicians like their own system less or the European more. The highly specialized training given nurses in the English and American system, and the position of trust that the nurse has come to occupy in consequence, may have given rise to some of the evils that the fair English critic of the nursing system pointed out. The consciousness of professional knowledge may have led some of its possessors into thinking themselves of more importance than they really are. Some may even have taken advantage of the position to entrap a callow doctor, or a susceptible unwary bachelor patient, into putting on the matrimonial halter. But these are not faults that are confined to nurses, and not necessarily connected with the training they receive. Meantime as the result of their training the physician and surgeon finds in them skilled and trustworthy assistants to whose prudence and carefulness he can entrust details of treatment or of preparation for an operation which relieve him of a weight of care. It is only a matter for rejoicing that in consequence of this position of trust the nurse has learned her own worth, and the dignity of her position, and has gained correspondingly in self respect. The hospital servant of the old days, as one sees them here, shows how distinct has been the change for the better from the invasion of professionalism, and one is glad not to have to go back. Perhaps, as in all things medical, the pendulum has swung a little too far in the training of nurses, but the trained nurse may be trusted, like advances generally in medicine, to find her proper place.

Occasionally one finds in the Austrian medical journals advertisements of positions which are open to young doctors and for which one of the requirements demanded in making out applications is somewhat unexpected. Besides asking for his degrees and evidence as to preliminary education and post-graduate experience, the notices require him to send his photograph. The personal appearance of a doctor has always been said to be of a good deal of importance as regards his success professionally in private practice, but this very *naive* admission that it will influence the decision as to his adaptibility for a hospital position is almost amusing in these days of supposedly scientific meidcine. Whether some have not been found who have sent a veritable "counterfeit presentment" of themselves in the shape of a photograph of some handsomer man, as is said to be done under corresponding circumstances in matrimonial negotiations, has not yet come to light, but may be confidently expected. Meantime the day of the personally attractive physician does not seem to be over, and the fortunately gifted ones may rejoice in consequence.

A Point in Electrolytic Epilation.—DUBREUILH (*Bull. Gen. de Thérapeut.*, February 28, 1897), in order to overcome the difficulty experienced in passing the electric needle to the root of the atrophied hairs, cuts all the hairs short in the region upon which he is about to work, and one or two weeks later he passes the needle into the follicle of those which have grown, and are therefore surely alive. The others are drawn out with forceps, and some weeks later, when the new hairs have grown in their places, they are treated with electrolysis. Being then young, they are more susceptible to the action of the electric current.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

The Semicentennial Meeting, Held at Philadelphia, June 1, 2, 3, and 4, 1897.

[Specially reported for THE MEDICAL NEWS.]

GENERAL SESSION.

FIRST DAY—JUNE 1ST.

AFTER the meeting had been called to order by the President, NICHOLAS SENN, M.D., of Illinois, the proceedings of the Association were opened by an eloquent prayer by the Rev. Leverett Bradley, the rector of St. Luke's Protestant Episcopal church, of Philadelphia.

Mayor Warwick was next introduced, and delivered a brief address. "I do not know," he said, in part, "that I have ever extended welcome on behalf of the city of Philadelphia to so many doctors. Philadelphia is the home of medicine; here Gross, Pancoast, Agnew, and Leidy made reputations which became national and worldwide. . . . A doctor is the last man on earth we send for, or want to send for, and although I have heard certain men in health deny both God and the doctor, I know that it is just these men who call most hurriedly for both when they fall ill. Personally, I have the highest regard and respect for the doctor, and I am really glad to see you here; and if I had a full opportunity to express all I think and feel you would see that it would be impossible for anyone to find a heartier and more sincere welcome than this that I give you now."

In the absence of Governor Hastings of Pennsylvania, who was detained in Harrisburg, the address of welcome on the part of the State was given by Charles Emory Smith, Ex-minister to Russia, who, in an address, which was both eloquent and facetious in parts, welcomed the Association to the State of Pennsylvania.

He said that, inasmuch as the Governor was compelled to hold an important surgical clinic to-day in Harrisburg, he had been drafted at the last moment as a substitute, an unprepared but entirely willing one. The nature of the Governor's work was the amputation of a gangrenous legislature, and he was sure that every member of the American Medical Association wished him every success in this dangerous procedure. Mr. Smith's remarks touched on the historical side of the medical profession in Philadelphia, and concluded with a hearty welcome on the part of the commonwealth of Pennsylvania to the members of the Association, wishing every success to their deliberations and the most beneficial results to mankind as their outcome.

DR. H. A. HARE, Chairman of the Committee on Arrangements, made several announcements relating chiefly to the social features of the meeting, and formally announced the program of entertainments for the day, and submitted the report of the committee, which was unanimously accepted.

Following this report the address by the President of the Association, DR. NICHOLAS SENN, was delivered. (See page 725.)

DR. HARE presented President Senn with a gold insignia of his office, and in a felicitous speech conveyed to him the appreciation of the Association of his work. Dr. Hare then moved that an invitation be extended to many foreign visitors now in Philadelphia to attend the meetings of the Association, which motion was unanimously carried.

The report of the Committee on the Rush Monument by A. L. GIHON, M.D., Medical Director United States Navy, was listened to with a great deal of attention. After a glowing tribute to the work, patriotism, and heroism of Benjamin Rush, Dr. GIHON went on to contrast the work accomplished by the Homeopathists in erecting a magnificent statue to Hahnemann, with the unfruitful efforts of the Regular School of Medicine to commemorate the name of "America's greatest physician" with a fitting memorial, and emphatically pointed out that, while a small body of the deluded followers of Hahnemann had in four years subscribed $75,000 for their purpose, the mass of the regular profession in America had in twelve years succeeded in raising only a trifle over $4000.

The committee had finally exhausted its own resources, and it now appeals to the Association to determine at once and definitely what further steps are to be taken in the matter—whether the erection of a modest bust of bronze, such as is warranted by the amount of money in the committee's hands, or an appropriate memorial, such as the name of Rush and his claim to national recognition demand. After the thanks of the Association were tendered to Dr. Gihon for the report, Dr. Cutter of New York moved that $1000 be appropriated annually by the Association until the requisite sum for the completion of the monument was obtained. Dr. Cutter's motion was withdrawn, however, after an amendment offered by Dr. Graham of Colorado that the Association immediately raise $100,000 for the purpose, and pledging Colorado to raise the first $2000 for the fund. Dr. Graham's amendment stirred up the greatest enthusiasm, and resulted in subscriptions on the spot of $2000 each from the States of Ohio, Missouri, Illinois, Pennsylvania, and New York; and in personal subscriptions of $100 each from Drs. Russ, Cutter, Hall, Ferguson, Wiggin, Jelks, Holt, and Herrick, besides the promises of nearly every president of the State societies to co-operate in the movement, according to their ability to contribute to the fund. A motion was also made and carried that the *Journal of the American Medical Association* keep a standing appeal in its columns for subscriptions to the Rush Monument Fund.

The report of the treasurer, Dr. H. P. Newman, showed that there was a balance on hand, January 1, 1897, of $9075.94; receipts for the year ending December 31, 1896, $44,141.14; expenses for the same period, $41,811.14.

A resolution was offered by the Executive Committee, and carried, that there be made an Executive Council of five, consisting of three officers of the Executive Committee and two officers to be chosen by election. Of this council of five, one must belong to the Section on Practice of Medicine and one to the Section on Surgery and Anatomy. The duties of the Council will consist in the transaction of the duties commonly delegated to the Executive Committee during the intervals between the meetings.

SECTION ON PRACTICE OF MEDICINE.

FIRST DAY—JUNE 1ST.

ON calling the section to order the Chairman, DR. J. H. MUSSER of Philadelphia, spoke of the inspiration that all must feel in meeting in this early home of American medicine. He felt that the time of the section would be best improved by taking up the scientific work instead of indulging in compliment and greeting.

DR. W. B. CAMAC of Baltimore, read a paper, entitled

THE SCHOTT TREATMENT OF CARDIAC DISEASE.

No satisfactory theory has ever been advanced to explain fully how this treatment meets the indications and produces the results which are claimed for it. Schott himself explained it on the theory of the reflex action of the nerve-centers. Lauder Brunton and Ludwig have discovered that the muscular system has a capacity of storing blood equivalent to that of the internal organs and the skin, and explained the actions of the Schott treatment on the theory that the resistant treatment and the baths combined stimulate the muscular system to such a degree as to relieve resistance in the peripheral circulation, but, whatever the theory of its action, the results obtained by the treatment at Neuheim are undoubted in reducing the size of enlarged and dilated hearts. This method of treatment has been introduced into the Johns Hopkins Hospital for the purpose of testing its efficacy not only in cases of heart disease but in affections of the kidneys. The report embraced the results of ten cases; of these four patients had died, two were not improved, one showed improvement only while under constant treatment, and in three the permanent results were most satisfactory. Some of these were cases of chronic nephritis in various stages of advancement, but all of the patients had enlarged or dilated hearts. In connection with the Schott treatment, however, various heart stimulants, such as nitroglycerin, digitalis, strophanthus, and strychnin were used as indications demanded. The conclusions of the experiments were that, while extensive changes in the position of the cardiac beat were obtained in all, that effect alone does not imply permanent improvement. In Bright's disease it cannot be depended upon for any satisfactory results.

DR. OSLER of Baltimore, in discussing the paper, said that in suitable cases the Schott treatment is undoubtedly of positive advantage. The objection to it is that it is difficult to carry out, the class of cases in which it is indicated are those of moderate dilatation of the heart without much degeneration of its muscular substance. This condition is usually found in heavy drinkers, between the ages of forty and forty-five.

DR. STOCKTON of Buffalo believes that the Schott treatment is dangerous when applied indiscriminately to cases of heart disease, and insisted that it should be carried out with great caution. In the baths at Neuheim, the water is charged naturally with gas. In imitation of this he had in some cases used ordinary cylinders of carbonic gas, allowing it to escape through a tube into the bottom of the bath. Dr. Woods Hutchinson had suggested to him an explanation of the beneficial effect of the gas by saying that it afforded a certain propulsive force to the blood-vessels and so relieved the heart by assisting the circulation.

DR. J. H. HERRICK of Cleveland said that as far as he had been able to investigate the subject, the treatment had no definite reference to the etiology of the disease. In all treatment some relationship to the etiology of the difficulty as well as the organic disease was demanded. For himself, he found more satisfactory results in proper attention to the eliminative and excretory functions and in proper nutrition.

DR. MORRIS of New York, in opposition to what Dr. Herrick had just said, insisted that the subject as presented in the paper was pertinent and practical. He had found enlargement and dilatation of the heart common, especially among beer-drinkers. He commended the Schott system of exercise in gastralgia. In his hands it had produced marked effect in diminishing the area of dulness of the heart in such cases.

DR. CAMAC, in closing the discussion, said that the effect on the kidneys is greater when the salt bath is given than when plain water is used, either hot or cold. In his paper he had given almost exclusive attention to the baths, but in connection with them, the prescribed gymnastic drills, such as were used at Neuheim, had been employed. For this purpose some of the nurses at the Johns Hopkins Hospital had been trained to apply the resistance exercise treatment. The food and diet had also been carefully regulated. In none of the cases had mountain climbing been tried, although this was a part of the systematic Schott method.

DR. D. L. ROCHESTER of Buffalo presented a paper upon

THE PROGNOSIS AND THERAPEUTIC INDICATIONS IN HEART DISEASE.

He classified all heart diseases into (1) disease of the cardiac valves; (2) disease of the blood-vessels; and (3) disease of the heart muscle. It had been his experience to have patients brought to him in conditions regarded as utterly hopeless, and, by proper treatment, he had been able not only to relieve them temporarily but to give them years of comfortable existence. Even in the most serious conditions of heart disease, it is never prudent to give an unfavorable prognosis until trial has been made by proper treatment to improve the tone and strength of the heart muscle and the arterial walls. His treatment consists in absolute rest in bed, the free use of cathartics, diuretics, diaphoretics, baths, passive exercise, and a liquid diet. Proper nutrition and exercise are important factors in the later management of the cases.

DR. J. B. HERRICK of Chicago strongly advocated the revival of venesection as a therapeutic measure of inestimable value. It is of especial service in cases of general edema and cyanosis. He narrated three cases of myocarditis in which he had applied this treatment with saving effect. In each instance he had drawn from sixteen to eighteen ounces of blood; in all of them the improvement was prompt, and in two of them it had been permanent.

DR. MARVIN of Louisville, Ky., strongly advocated the use of strychnin hypodermically in cases of acute dilatation of the heart. His method is to begin with one-twentieth of a grain of the drug and to increase it steadily until he obtains the physiologic effects. Rest in bed and carefully regulated nutrition are also potent factors in reaching permanent results.

DR. J. M. UPSHUR of Richmond, Va., endorsed what the previous speaker had said with regard to strychnin, and advocated the use of nitroglycerin alternately with the strychnin.

DR. WAINWRIGHT advocated venesection in extreme conditions due to heart disease. He reported the case of a woman suddenly presented to him in extreme cyanosis from senile heart disease, from whom he removed eighteen ounces of blood, with prompt and lasting benefit.

DR. ROCHESTER, in closing the discussion, said he used tincture of nux vomica as a heart tonic. He gave it in large doses, gradually increasing up to 1 dram three times a day.

DR. C. F. HOOVER of Cleveland read, by invitation, a paper, entitled

REDUPLICATION OF HEART SOUNDS.

Various theories have been advanced to account for the phenomenon of double sounds of the heart. He discussed these very elaborately and reached the conclusion that negative tension in the thorax, not compensated for by increased strength of the heart beat, occasioned an asynchonous action of the two sides of the heart. This necessarily produced the double sound.

DR. HENRY BEATTES of Philadelphia read a paper upon

THE USE OF DIGITALIN WITH REFERENCE TO THE DOSE.

Digitalis has long had the reputation of being a most uncertain drug. It has been discovered that the contradictory physiologic effects are due to the existence of elements in the crude drug having diametrically opposite properties. The attention of the pharmacist has therefore been directed to separating and refining the different alkaloidal elements. There are now upon the market two preparations of digitalin, one known as the German, or Pure Merck, and the other as the French Merck, the former is readily soluble in water and alcohol, but not readily soluble in ether; the latter differs from this in not being readily soluble in water, and is also a more powerful drug and necessarily must be given in smaller doses. Digitalin, German, is the preparation he uses. One-tenth of a grain is the minimum dose for an adult, and one-half a grain the maximum dose. It does not produce irritation of the digestive track even when used for long periods of time, nor does it have any cumulative effect. It is indicated in all lesions of the heart except stenosis with dilatation. Cases presenting senile conditions were described in which remarkably favorable results were obtained.

DR. J. H. HERRICK, during the discussion of the paper, said that digitalis or digitalin acts upon the heart through the pneumogastric nerve. The one precaution which he wished to emphasize was that neither digitalis nor digitalin, either "French" or "German," should be given in inflammatory conditions of the heart. He was opposed to the routine treatment of heart lesions, no matmer what their nature, by any drug, and more especially by digitalis.

DR. HARRY TOULMIN of Philadelphia read a paper, entitled

TRACHEAL TUGGING.

He classified his cases into (1) very slight up-and-down movement, (2) slight up-and-down movement, (3) tugging, (4) extra tugging. Seventy-five patients were examined. Of these, 44 presented no symptoms which could be ascribed to this class, 19 belonged to class 1, 5 to class 2, 2 to class 3, and 5 to class 4. The phenomena of the moving of the trachea with the respirations or the pulsations of the heart were due, as a rule, to aneurism of the ascending aorta.

DR. HELEN BALDWIN of New York read a paper upon

THROMBOSIS OF THE BLOOD-VESSELS OF THE NECK.

She reported the case of a colored girl, aged twenty, who presented the symptoms of pain in the left side of the neck and in the axilla. There was extreme dilatation of the heart and panting respiration. Temperature taken in the mouth varied between 94° and 96.5° F., while in the rectum it was constant at 102°. The external jugular was plainly defined and had the feeling of a hard cord. The patient developed signs of pneumonia, and died on the tenth day. Autopsy revealed an enlarged heart, with organized thrombi in both the external and internal jugular veins. Many similar cases were cited from literature upon the subject, most of which terminated fatally in a short time.

SECTION ON SURGERY AND ANATOMY.

FIRST DAY—JUNE 1ST.

THE section was called to order by the Chairman, **DR. REGINALD H. SAYRE** of New York, who made a brief address contrasting the surgeons of the past with those of the present and alluding to the steady development of the science.

DR. B. MERRILL RICKETTS of Cincinnati read a paper, with the title

LIGATION OF THE COMMON CAROTID FOR TRIFACIAL NEURALGIA, WITH EXPERIMENTS AND OBSERVATIONS ON DOGS.

The paper was illustrated by specimens and charts of the arterial and nervous systems. The pain in neuralgia, the speaker said, is due to anemia or congestion. In early life congestion is the common cause, while in advanced years anemia is the usual factor. The effect of ligation of the common carotid artery is to diminish the blood pressure. In experiments on dogs he had found that no histologic change occurs in the nervous structure after the ligation. He reported the case of a man ninety-six years of age, who suffered from trifacial neuralgia and who was very much benefited by the ligation of the carotid artery. The profuse hemorrhage accompanying the operations of Rose, Hartley, and Kraske were contrasted with the bloodless operation of ligation of the carotid.

DR. J. MCFADDEN GASTON of Atlanta read a paper, entitled

THE NERVE ELEMENT IN SURGICAL PATHOLOGY.

He said it was a fair inference that relief from pain may also indicate a curative influence. Success in surgical operations depends not a little upon the frame of mind of the patient and the nature of the surroundings. The speaker believed shock to be due to the continuous baleful influence induced by the injured tissues, which influence may be arrested by removing the part. The importance of recognizing the neuropathic diathesis cannot be overestimated. There are many evidences of the effects of nerve reflexes which could be alluded to. The writer presented the following conclusions:

1. The cutaneous development of the minute branches of the cerebrospinal system of nerves and the ganglionic ramifications of the great sympathetic are so related to the capillaries as to establish a reciprocal action between them and the great nerve-centers.

2. The vasomotor nerves are so intimately linked to the excitomotor, the excitosecretory, and excitodynamic system of nerves that the impressions made through the superficial afferent nerves are conveyed to all the corporeal structures and tissues so as to produce their effects on the different organs.

3. Reflex phenomena depend upon a complex interchange of local pathologic conditions with the nervous ramifications to remote parts of the body.

4. The fountain head of energy for all functions lies in the nerve-centers, and by controlling emanations from this source of power, the vital forces will be propagated with regularity and uniformity to all the remote parts of the physical organism. On the contrary, a hurtful influence disseminated from the nerve-centers causes disease of different organs.

5. The means to be adopted for avoiding injurious impressions upon the nerve-centers and the measures to be used for the correction of their derangements, make up the whole prophylactic agency of hygiene, and include all the therapeutic appliances in the treatment of the disease as well as the application of surgical measures.

6. Close observation of the various modifications of the nerve element in the physical organism should reveal its direct influence in surgical pathology and lead the surgeon to the adoption of proper means of relief.

DR. J. EWING MEARS presented a paper upon

OPERATIVE PROCEDURE FOR THE RELIEF OF OCCLUSION OF THE JAWS.

Closure of the jaws may be due to sloughing, ulcerating, cicatricial contraction, or to spasm. The spasmodic variety may be brought about by irritation of the fifth nerve, delayed or difficult eruption of the three lower molar teeth, etc. In the case of closure of the jaw from difficult eruption, the mouth should be forced open and the second molar extracted, or the third may be removed if displaced or otherwise abnormal. In all cases of spasmodic closure the cause should be removed.

The chronic or permanent form of closure of the jaws results also from rheumatic and other diseases of the articulation with the deposit of bone in the joint. Perhaps the most frequent cause of this class of cases is fracture of the condyle which has been recognized. The cause of occlusion of the jaws may be unilateral or bilateral. In each case a careful examination should be made in order to determine the best method of procedure.

The following conclusions were drawn:

1. Jaw closure due to the presence of cicatricial tissue in the buccal spaces can be most efficiently relieved by the formation of a canal lined by normal membrane by means of a ligature passed behind the cicatricial mass, reunion of the divided tissues and reformation of the nodular tissue not occurring after division when this canal has been formed.

2. Ankylosis of the temporomaxillary articulation producing jaw closure can be best relieved by removal of both coronoid and condyloid processes with the upper portion of the ramus, thus affording ample space for the formation of a freely movable false joint. The operation should be performed through the mouth, thus avoiding disfiguring cicatrices.

DR. ERNEST LAPLACE of Philadelphia read a paper upon

IMPROVEMENT OF BRAIN FUNCTION BY SURGICAL INTERFERENCE.

The two great symptoms of brain troubles which call for interference are pain and disturbed function. In operating, the two dangers to be guarded against are shock and sepsis; the former is to be avoided by careful hemostasis, by the use of strychnin and external heat, and keeping the head low, the latter by the strictest antiseptic precautions. In congestion and other conditions in which general swelling was supposed to be present, the author has performed transverse linear craniectomy. After removing a portion of bone he incises the dura throughout the whole length, avoiding the superior longitudinal sinus. The wound is packed with sterile gauze, the ends of which come out at either extremity, the scalp then being united. On the eighth day the sutures and gauze are removed. He also referred to trephining for epilepsy, and linear craniectomy for microcephalus, in both of which conditions he had obtained favorable results.

DR. M. H. CRYER of Philadelphia demonstrated on the cadaver a new surgical engine, which is a modification of the well-known dental engine, more powerfully made and constructed to run at a greater speed. The advantages claimed for this engine are the ease and accuracy with which any portion of bone can be removed and the compact and aseptic construction of the apparatus.

The last two papers were discussed together. DR. WYMAN of Detroit coincided with the views expressed by Dr. Laplace. DR. J. WILLIAM WHITE thought the possibilities of evil which would follow the general adoption of the radical measures advised by Dr. Laplace should not be overlooked. Taking into consideration all brain operations by surgeons the country over, the mortality would be considerably more than that expressed in the paper referred to. It is necessary to distinguish between infected brain lesions which require drainage and other conditions in which this could not possibly result in any benefit, such as cases of arrested development, insanity, and others of this class. A diffuse brain lesion cannot be drained through one opening, or even through a series of openings. A very large number of cases must be observed before it is safe to say that improvement is to be expected after these procedures. The immediate result of the operation itself should be taken into account. In a paper published a few years since on "The Effect of Operations, *per se*," he had showed that improvement in a large number of conditions had followed simple explorations or other measures that could not possibly have affected the condition. We cannot, however, from these cases base conclusions which would warrant us in advising these operations upon other patients. In cases of localizing symptoms, either of abscess, tumor, or depressed fracture, the indication for operation is distinct and imperative, but without some clear-cut symptom of abnormal intracranial condition, which could probably be remedied by trephining, he would hesitate to advise operation.

DR. FRANK STAHL of Chicago read a paper, entitled

ONE OF THE RARER FORMS OF HERNIA.

He included two forms—one partial intestinal-wall hernia, and diverticula hernia. The former is generally acceded to occur in a chronic condition, but many eminent authorities deny the existence of the acute condition of partial herniæ. He described the mechanism of the occurrence of this condition, and referred to cases in which it had been present beyond doubt.

SECTION ON OBSTETRICS AND GYNECOLOGY.

FIRST DAY—JUNE 1ST.

The Section was called to order by the Chairman, DR. MILO B. WARD of Topeka, Kan.

In the absence of the Secretary, DR. H. M. FISHER of Philadelphia was elected to fill the position.

DR. WARD, in his address, presented a review of some of the work accomplished in gynecology during the last half century, dwelling particularly upon the labors of honored members of the American Medical Association. Sims and Emmet, he said, were the pioneers of gynecology in America, and they were ably seconded by such eminent followers as Peaslee, Thomas, Goodell, Fordyce Barker, Parvin, and a score of others. Numerous innovations and valuable suggestions in the treatment of the various gynecologic conditions came from them. He called attention to the fact that to this great medical organization must be accorded credit for the movement that resulted in the separation of gynecology from obstetrics, and the establishment of special chairs of gynecology in the various medical colleges of the land. The question of the advisability of the removal of the uterus in suppurative disease of the adnexa has agitated the minds of gynecologists during the past year, and the tendency toward this radical procedure has largely developed, although there are many and able men opposed thereto.

No universal rule has been as yet found for the operative treatment of uterine fibroids. The prevention of vaginal prolapse after total extirpation of the uterus is a puzzling question. The method of anchoring the vaginal walls to the broad ligament pedicles is probably the best that has as yet been suggested. Carcinoma of the cervix is an indication now for the entire removal of the uterus in preference to amputation by the knife or by the galvanocautery, although some operators still adhere to these methods, especially in the so-called inoperable cases. Hysteropexy and Alexander's operation have been thoroughly discussed during the past year, and many interesting reports and arguments for and against these procedures have been presented.

A CONSIDERATION OF SOME OF THE CONDITIONS INFLUENCING THE RESULTS OF THE SURGICAL TREATMENT OF UTERINE RETROPOSITION

was the title of a paper presented by **Dr. Augustus P. Clarke** of Cambridge, Mass. He stated that retroversion of the uterus is generally preceded by a certain amount of prolapse, due to a yielding of the supports from below. Usually the axis of the cervix is nearly at right angles to the axis of the vagina. Any deviation from this position is not to be considered as pathologic until the axes of the two organs nearly correspond. In some instances fatty degeneration of the round ligaments causes them to become unable to support the uterus, and adhesions also help to drag this organ out of place. In order to restore the uterus, these adhesions must be separated and the round ligaments shortened. The genupectoral position, with gentle manipulation, will best restore the uterus to its normal position when it is found to be resting between the uterosacral ligaments. The danger of hernia following the operation of shortening the round ligaments has been advanced as an objection to the performance of this operation, but proper precautions will suffice to prevent this complication. Ventrofixation or ventrosuspension has become a favorite operation for the cure of the lesion. This operation in certain cases sets up a most distressing pathologic condition, and should not be performed in women who have not yet reached the menopause. The chief cause of the failure in operations for retrodisplacement is the persistence of adhesions. In such cases hysterectomy is the best method for insuring permanent relief.

In the discussion which followed, **Dr. Werner** of Philadelphia said that she wished to place on record the cases of two patients who had suffered from the condition described in the paper. By the use of rest, packing, and a year's persistent treatment, cure resulted, and in one instance the patient passed successfully through two subsequent pregnancies. There was, however, still some tendency to prolapse. The second case was similar. She wished especially to ask the author of the paper what result was to be expected in subsequent pregnancies after the various operative procedures, and whether stretching would recur?

Dr. M. Price of Philadelphia said that in thirty-years' practice he had not seen one case of retrodisplacement that could not be cured. Purely medical means will answer in the case of patients that have not been torn in labor. He objects to shortening the round ligaments, and believes that Nature never meant these ligaments to support a hair's weight. The diseased condition consists essentially of an atrophy of the uterine wall, and it should be treated by some mechanical support in the uterus itself or by some support from below. Ventrofixation or other operations of the kind are mischievous. The pedicles, after the serra-neude method of hysterectomy, will ultimately stretch, and if this is true, to how great an extent will the uterus be held up by the tiny round ligaments?

Dr. Sell of New York believes in medical gynecology. Massage, internal and external, will break up the adhesions and restore the normal condition. Gymnastics should also be tried, the patient lying flat upon the floor and moving her limbs in such a manner as to produce constant tension of the uterus upward. This maneuver should be repeated two or three times weekly, the interval gradually being increased.

Dr. Joseph Eastman of Indianapolis remarked that before considering therapeusis we should always consider condition. Uterine displacement and chronic constipation are the two great causes of the diseases of women. Exhaustion of the life of the pelvic plexus of nerves, the result of over-sexual indulgence, is the cause of many cases of chronic constipation. The uterus, to a certain extent, is an erectile organ, and in these cases it needs physiologic rest, and if any mechanical support is required, he would suggest a "barbed-wire" pessary.

Dr. Rosenthal of Indiana stated that no condition gives the gynecologist such trouble as retrodisplacement of the uterus. It is a condition found in the young girl as well as in the married woman. It is especially apt to occur in women in whom the bladder is attached to the uterus low down, so that the cervix is drawn forward, that is, where there exists a shortening of the anterior vaginal wall. He believes that the pessary is useful in its place, especially in cases originating *post-partum* or *post-abortum*.

Dr. Joseph Price of Philadelphia stated that, in all his practice, he had not seen a woman who could not nurse her baby, and yet it is becoming common, he understands, for women to refuse to do so, and for this reason subinvolution is becoming more frequent. The older gynecologists met with success merely from the use of pessaries in these displacements. The doctor of to-day prefers to put his patient to bed for three or four weeks, and do a ventrofixation, while refusing to give three or four-weeks' time in bed with the use of the pessary. He is opposed to both Alexander's operation and ventrofixation. He has undone many ventrofixations. The pessary is all that is needed if the floor of the pelvis is restored.

Dr. Goldsphoon of Chicago regretted the difference of opinion advanced by the various speakers. He believes that the round ligaments hold the fundus uteri forward, and that the uterosacral ligaments draw the cervical zone backward, producing normally an anteversion of the organ. If either of these ligaments stretches, the organ falls back. If this retroversion is due to a stretching of the uterosacral ligaments, Alexander's operation will not cure the condition, while if the round ligaments are at fault, this operation is the best procedure with which we are acquainted.

DR. H. M. FISHER of Philadelphia said that the uterus has no fixed normal position. It can readily be retro- or lateroverted, and varies in position with the degree of fulness of the bladder and rectum. It is, in other words, in a state of mobile equilibrium. Upon the cause of the retrodisplacement will depend the method of treatment. We may have a puerile retrodisplacement due to chronic constipation. The most frequent cause, however, is to be found in the puerperium as the result of a tight bandage, dorsal decubitus, and chronic constipation. Involution is thus prevented, and a permanent retrodisplacement follows. It is not every retrodisplacement of the uterus that gives rise to symptoms.

DR. HALL of Missouri thought that the results of Alexander's operation are worse than the disease. Too many herniæ have followed the operation, especially in fat women. He believes that the future operation is not Alexander's procedure, but fixation of the uterus through the vagina, according to Vineburg's method.

DR. HUMISTON of Cleveland saw Alexander's operation performed by Alexander himself ten years ago, and was favorably impressed. But he has seen so many failures following it that now he finds no indications for its performance. If the adnexa are diseased, the only thing to do is to remove them by abdominal section, and then replace the uterus; if they are not diseased, we can succeed by the conservative method of treatment.

DR. MASSEY of Philadelphia believes that the inflammatory condition always precedes the displacement, and not the displacement the inflammation.

DR. LAWRENCE of Columbus said that the symptoms from which the patients suffer are not directly dependent upon the displacement, but upon the metritis, endometritis, peritonitis, adhesions, and diseased adnexa that accompany it. Shortening the round ligament in this condition is not devoid of danger. The anteflexion resulting from ventrofixation is just as serious a matter as the retrodisplacement, and the patients cannot be very much benefited thereby. Shortening the round ligament by an abdominal section will accomplish the work without any serious condition following.

DR. JOSEPH PRICE read a paper on

MECHANISM AND TREATMENT OF PERINEAL LACERATIONS. (See page 734.)

DR. STONE of Washington considers Emmet's operation the most difficult of all operations in surgery. Tait's operation, he thinks, is of service only in restoring torn tissues, and not the floor above. Emmet never ties his sutures until all are applied, including the crown suture. The latter is applied from the myrtiform caruncle upward and inward, including the crest of the rectocele, and out at the corresponding point in the other side, thus, when tied, shortening the vagina.

DR. M. PRICE said that, in denuding the muscle in complete tears, it is necessary to bury a tenaculum deeply into the dimple so as to catch the muscle to be repaired. The first set of sutures in the vagina is closed. The second set of sutures is passed from the perineum toward the vagina, the last two sutures of this set being known as the sphincter sutures. The retracted edges of the muscle are drawn up and the needle plunged through. The union should be only moderately tight so as to avoid cutting. Failure will then not occur.

DR. EASTMAN said that, in restoring the floor, he dilates first the sphincter and then secures relaxation, so that the anus does not so nearly approximate the vulvar orifice, and thereby gets more space in which to form the floor. This dilation should be done by an assistant or nurse who does not aid in the subsequent operation.

SECTION ON DISEASES OF CHILDREN.

FIRST DAY—JUNE 1ST.

The address of the Chairman, DR. J. A. LARRABEE of Louisville, Ky., was in the nature of a history of the Section.

A letter was read from DR. A. JACOBI, the organizer of the Section, and its first President, who stated that it was not founded but was in the air—a "spontaneous generation." It was the sixth section formed in the history of the Association. Mention was made of the rapid strides in pediatrics, its establishment as a specialty, and its separation from the Chair of Obstetrics in our medical colleges. Scarcity of pediatric literature was until lately to be deplored, but this can be no longer urged. A suggestion was made that a censorship be created over medical literature because of the large number of papers now unnecessarily presented.

DR. O. W. BRAYMER of Camden, N. J., read a paper, entitled

THE ANTISEPTIC VERSUS THE ANTITOXIC TREATMENT OF DIPHTHERIA.

The author's opinion was that antitoxin does not deserve the reputation it has acquired. He advocated local antiseptic treatment, and quoted statistics of cases occurring in his practice in which chlorate of potash and iron had alone been used with most gratifying results.

THE TREATMENT OF DIPHTHERIA

was the title of a paper read by DR. JOHN H. COUGHLIN of New York. He said, in part, that a better understanding of the action of old remedies is more to be desired than constant experimentation with new ones. In the treatment of diphtheria it is very essential to keep up the nutrition. Nourishment should be given in small quantities, and often. Large quantities of alcohol should never be given to children, for, aside from the catarrhal condition of the gastro-intestinal tract that ensues from such ingestion, the eliminative organs become overworked.

THE SERUM-THERAPY OF DIPHTHERIA

by DR. EDWIN KLEBS of Chicago, was the title of a paper read by the author's son. The writer had arrived at the conclusion that both antitoxic and bactericidal properties were inherent in the serum, and that both worked to produce a cure; they are not products formed in immunized animals, but are transformed from injected culture fluid.

Dr. Edwin Rosenthal then read a paper on

THE SPECIFIC USE OF DIPHTHERIA ANTITOXIN IN LARYNGEAL DIPHTHERIA,

and was followed by **Dr. W. W. Gray**, of Bridgeport, Conn., who presented one with the title,

THERAPEUTICS OF DIPHTHERIA WITH SPECIAL REFERENCE TO ANTITOXIN.

During the general discussion of these papers **Dr. Frederick A. Packard** of Philadelphia said that the statistics that had been quoted in favor of the antitoxin treatment of diphtheria were most convincing. He doubted the value of the agent, however, as a prophylactic, as in a number of instances in which he had made use of it for this purpose it had proved ineffectual.

Dr. W. P. Northrup of New York said that every member of the staff of the Willard Parker Hospital for Contagious Diseases, New York, with one exception, heartily endorsed the use of antitoxin. As far as its prophylactic value is concerned, the record made at the New York Infant Asylum, when a serious epidemic was stopped by the injection of small immunizing doses, is convincing. During the pre-antitoxin days the speaker had had twenty-two successive deaths after intubation in private practice, and Dr. O'Dwyer had had twenty-five in spite of the best treatment then known.

SECTION ON MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

FIRST DAY—JUNE 1ST.

Chairman, **Dr. Warren B. Hill** of Milwaukee.

The Section was called to order at three o'clock. The chairman made a brief address of welcome to the members of the delegation from the American Pharmaceutical Association, which was responded to by Dr. F. E. Stewart, chairman of the delegation. The secretary read a communication from the Philadelphia College of Pharmacy, extending an invitation for the Section to hold its sessions in the lecture-hall and museum of the college. On motion, it was resolved to visit the College of Pharmacy on June 4th, and to hold the Thursday afternoon session there.

The first paper, entitled

CELANDIN; ITS PHARMACOLOGY, PHYSIOLOGIC ACTION, AND THERAPY,

was read by **Dr. John V. Shoemaker** of Philadelphia.

The extravagant claims made about a year ago in favor of celandin (*Chelidonium majus*) led the reporter to investigate the subject clinically in the treatment of cancer of the skin and in cases of psoriasis and similar conditions, for which the drug had been recommended by a Russian physician. Dr. Shoemaker's results were disappointing. He could not obtain the effects which had been reported, and considered that the claims were not well-founded. He used a fluid extract made with equal parts of glycerin and water as a medium, as recommended in the Russian papers, internally and locally, topically and hypodermically. While the drug has no special action in cancer, it is a good tonic in moderate doses, a stimulant in larger ones, and a purgative if large doses are given. By its physiologic action upon the bronchial mucous membrane, it is expectorant, and generally is a stimulant to the glands of the skin and mucous membranes. It is efficacious in the treatment of cases attended by infiltration of the skin, as in chronic local eczema and psoriasis, but has no power to influence or retard the progress of cancer.

Dr. F. E. Stewart said that there had been many cancer specifics brought forward and they had all followed the same course. He recalled the history of the introduction of another drug some time ago, when the newspaper accounts of its wonderful effects in Europe had caused such a demand for it, that an amount of syrup and extract representing more than two tons of the remedy was sold in the United States before an ounce of it had been imported. This shows the unreliability of the preparations that are sold to the public. He asked if the reader of the paper had noticed any difference between the effects of the recent herb and the dried specimen.

Dr. Thornton said that the claims of the Russian physicians for celandin were also made by Dr. Spivak, now of Denver, who published a clinical report of successful cases. The report was valueless, however, because it was not accompanied by data of microscopic examinations of the tumors. He congratulated Dr. Shoemaker upon reporting his negative evidence, which is of great assistance, especially to the younger members of the profession.

Dr. Shoemaker said that he had come to the conclusion that the great multitude of new drugs that are thrust upon the medical profession put us in a very awkward light before the public, especially those which are known by newly coined words and expressions. There is one consideration in favor of celandin and that is, that it is official. When, a number of years ago, he wrote his book on "Therapeutics" he tried to include all the new remedies, and had since found many of them to be worthless. In reply to Dr. Stewart, he stated that he had used both the fresh and the dried drug with all the precautions recommended by the Russian reporter and had found them equally worthless in the treatment of cancer.

Dr. C. C. Fite of New York read a paper, entitled

A PLEA FOR UNIFORMITY IN DIASTASE TESTS.

Dr. F. E. Stewart of Detroit said that as the paper brought up a question of much importance and was the result of an extended investigation, he moved that a committee be appointed, consisting of the Chairman of the Section and two other members, to suggest a practical test for diastase and to recommend the same to the Committee on Revision of the United States Pharmacopeia, and that the result of their deliberations be transmitted to the American Pharmaceutical Association for its concurrence. He said that he had himself given considerable attention to the subject, and as a result of about three thousand tests made under his direction by competent chemists, he had found a great variety of methods in use and corresponding differences in the results. Active diastase has great starch-transforming power; for instance, a few grains are sufficient to convert all the starch taken in during an ordinary meal by an adult man in the period of less than a minute of time. Many of the preparations said to contain diastase have no starch-digesting power whatever. Everything depends, therefore, on the quality of the diastase, and some regulation is urgently needed so as to enable the physician to differentiate between the true diastase preparations and those which are falsely alleged to contain diastase.

DR. F. R. STODDARD of Shelburne, Vt., said that he had been impressed with the importance of the positive determination of the digestive power of diastase, and preparations which claim to have diastatic power, and of the necessity of the establishment of some uniform test by authority of the Pharmacopeia. This is a question which should interest every physician who prescribes these remedies. The manufacturer under present conditions sends out these preparations, and the physician uses them expecting them to fulfil the claims of the manufacturer, and that they will do a certain amount of work in the digestion of starchy foods, but at present he has no means of knowing whether these claims are true or false.

The Chairman said that the question was of great importance, because the American people are very prone to suffer from what may be called amylolitic indigestion, owing to a number of contributing causes. In the first place there is too much starch in our food, and in the second, owing to hasty deglutition, there is a deficiency of ptyalin. There is therefore a great demand for diastase and preparations which claim to assist in the digestion of starchy foods, and there is no doubt that some form of diastase will be introduced into the next Pharmacopeia. A proper test should therefore be established and a standard be made before its introduction.

DR. F. WOODBURY of Philadelphia said that the chemistry of the digestive processes is now so well understood by physicians that the form of dyspepsia characterized by deficient amylolitic power in the secretions is generally recognized. As a result, physicians no longer prescribe pepsin for all conditions of imperfect digestion, but they differentiate the cases in which a starch-transforming ferment will afford the desired relief from those in which the proteid digestion is at fault. Therefore, measures to promote the secretion of saliva and of the pancreatic and intestinal juices, are recommended, and there is a constantly increasing demand for starch-transforming ferments by the profession. It is most important, therefore, that some uniform test should be formulated by the biologic chemists, which may enable us to distinguish between the physiologically active and the inert or fraudulent diastatic preparations offered to us by the manufacturers.

Dr. Fite, in reply to a question, said that he had stated that the acidity of the gastric juice will retard the action of diastase in the stomach. In cases of hyperacidity it is necessary to administer an alkali before the meal, and then by the use of diastase taken with the food the difficulty can be overcome and the symptoms relieved. The reason why so many physicians have failed to relieve patients suffering from starchy indigestion is because the existence of this condition of hyperacidity, and neglect to administer the alkali before meals. Bicarbonate of soda in 10 to 20-grain doses immediately before each meal will be of great assistance to the action of the diastase taken during the meal. Six years ago, when he first took up the study of this subject, diastase was practically unknown to a majority of practitioners, whereas now it is used to a great extent by physicians all over the world. The loss of saliva by tobacco-chewers, the defective mastication of food, and the limited secretion in young children, with the great proportion of starch in our food as pointed out, all contribute to make diastase and its preparations prominent in therapeutics, and there should be some method of standardizing these products, or of ascertaining the real value of diastase by some practical and convenient test.

The Chairman put the motion; which was adopted unanimously, and he appointed Drs. Fite and Stewart to serve on the committee with himself.

The Chairman then delivered his Address, in which he referred to the valuable contributions rendered by pharmacy and analytical chemistry to the science of therapeutics. He deprecated the use of ready prepared formulæ, and secret or proprietary preparations by the profession, and urged upon physicians a closer study of the resources of the Pharmacopeia. The brilliant results from the introduction of the serum-therapy are now attracting general attention to this new method of treatment, and encourage the hope of greater success in future in controlling infectious disease. The use of toxins, for the purposes of immunization, which has been so successful in the biologic laboratory, leads to the belief that this method, though still in its infancy, promises much. He believed that it might be possible to extract the active principle from this class of agents in the same way that quinin is extracted from cinchona, and that in the future these chemical substances, thus obtained, will occupy an important place in therapeutics.

DR. F. WOODBURY said that the use of ready-made preparations by the profession is largely the result of routine practice. Each patient should have his case especially investigated by the physician so as to ascertain the presence of any latent disease, such as nephritis, diabetes, or tuberculosis, for instance, and the tendency to prescribe for symptoms should be discouraged. The serum treatment is still in the empiric stage and cannot be considered well established upon a scientific basis until, as Dr. Hill had suggested, the active principles have been isolated and properly investigated.

DR. STEWART moved that the address be sent to the Executive Committee with a request to report its action thereon to the general session. This motion was adopted.

DR. HILL said that, in regard to immunization by toxins, he would mention a case in illustration. About two years ago, he accidentally immunized a man from erysipelas by injections of serum from the streptococcus erysipelatus. The man had an inoperable sarcoma, and he had tried Dr. Coley's toxins for the purpose of experiment and of amusing the patient rather than from any hope of a good result. At first he used from five to ten minims (.01–.015 cc.), which afforded a decided reaction, but finally no reaction occurred after an injection of ten centimeters of toxin. He was absolutely immune. It is generally said that this protection is due to some change in the leucocytes and their secretion, but it is due, in the speaker's opinion, to some modification in the fixed cells of the tissues. There were two sets of results from the above experiment: (1) When a patient is liable to be infected from the streptococcus in a wound, not due to unclean surgery, but in the necessarily suppurating cases, if we know this in advance of operation, we may render the patient immune in this way. (2) The action of the antitoxin in the system is also to be considered. This is a broad field for investigation by organic chemists. Patients become protected against morphin so that large doses have no toxic effects. It has been shown that the blood taken from a rabbit which has been rendered immune from large doses of morphin will render another rabbit, after injection into its blood-vessels, also immune against the drug. This acquired immunity from poisons is accompanied by certain changes in the blood and fixed tissue cells and if, as we know, man can be protected from vegetable and metallic poisons by a course of treatment, he may similarly be protected from various diseases in which toxins are produced. After the reapers in the field of bacteriology have done their work, it will be our duty to take it up where they left off and perfect new therapeutic truths for application to diseased conditions.

SECTION ON NEUROLOGY AND MEDICAL JURISPRUDENCE.

FIRST DAY—JUNE 1ST.

DR. W. J. HERDMAN of Ann Arbor, Mich., Chairman.

DR. HERDMAN delivered the annual address, entitled

THE EVIDENCES OF THE PROGRESS OF NEUROLOGY AND MEDICAL JURISPRUDENCE.

He referred to the ready assimilation of new facts and discoveries in the histology of the central nervous system, and the rapid growth of literature in the form of text-books and monographs. It was most desirable that some effort at uniformity in neurologic terminology be made. The relationship of neurology to the humane sciences has proved stimulating and helpful. In medical jurisprudence the growing tendency to subordinate the *absolute rights* of individuals to fancied claims of society, is to be deprecated. In this connection a recent case in London was alluded to in which the surgeon had, contrary to the express and positive instructions of his patient, removed both ovaries on the plea that otherwise the patient's life would be shortened. Approval of legislation in the direction of unsexing criminals, epileptics, etc., was denounced as an unwarranted infringement of the absolute rights of man. The section should sanction by resolution the attempt at uniformity in neural terms, should relegate the work in medical jurisprudence to a separate section, and should endeavor to make this section the source of exact and authoritative information on the subject of neurology.

DR. CHARLES H. HUGHES of St. Louis read a paper, entitled

THE HISTORY OF AMERICAN NEUROLOGY,

in which he presented an exhaustive historical account of the achievements of American neurologists for upward of a century.

TRUNK ANESTHESIA IN LOCOMOTOR ATAXIA

was the title of an interesting paper by DR. CHARLES W. BURR of Philadelphia. This was discussed by Drs. Hugh T. Patrick of Chicago, C. C. Hersman of Pittsburg, and Moyer of Chicago.

THE PARALYSES, BY ONE OF THE MANY PARALYTICS,

by SAMUEL KNOX CRAWFORD of Chicago, Ill., was read by title.

DR. E. S. PETTYJOHN of Alma, Mich., presented a communication on

THE DIAGNOSIS AND TREATMENT OF INTERNAL CEREBRAL MENINGITIS CHRONICA.

He advocated galvanization of the brain as a valuable adjunct to the treatment of this condition, except in the acute febrile form.

The next paper, on the

DIFFERENTIAL DIAGNOSIS BETWEEN CEREBRAL SYPHILIS AND GENERAL PARESIS,

was by DR. HUGH T. PATRICK, and was discussed by Drs. Carpenter of Cleveland, Moyer and Jones of Minneapolis, and Hughes of St. Louis.

DR. AUGUSTUS A. ESHNER of Philadelphia read a paper on

HEREDITARY LATERAL SCLEROSIS,

in which he detailed cases of a mother and son similarly affected with this disease.

A paper, entitled

A CASE OF THOMSEN'S DISEASE COMPLICATED BY MULTIPLE NEURITIS,

by DR. M. NELSON VOLDENG of Des Moines, Iowa, and one on

PAIN TRAUMATISMS,

by DR. THOMAS H. MANLEY of New York, were read by title.

DR. W. S. WATSON of Fishkill-on-Hudson, N. Y., presented a paper on

MELANCHOLIA AND ITS TREATMENT.

He spoke of a case of myxedematous nature which was aided by the thyroid treatment. The paper was discussed by Drs. Canfield of Bristol, R. I., Hughes of St. Louis, Kindred of New York, and Spitzker of New York.

SECTION ON OPHTHALMOLOGY.

FIRST DAY--JUNE 1ST.

This section was called to order by the Chairman, DR. GEO. E. DE SCHWEINITZ of Philadelphia.

The first paper presented was by DR. HOWARD F. HANSELL of Philadelphia upon

ROENTGEN RAYS IN OPHTHALMIC SURGERY.

In this he described the ingenious methods and devices which had been invented in the application of skiagraphy to the eye. One of the first successful attempts had been made by putting the photographic film in the nostril and exposing the temporal side of the eyeball to the tube. Since this many successes had been attained by placing the plate or film in the canthus, or binding it upon the temples.

The subject was continued by DR. WM. F. SWEET of Philadelphia upon

LOCALIZATION OF FOREIGN BODIES WITHIN THE EYE BY MEANS OF X-RAYS.

Dr. Sweet explained how, by moving the tube a certain known distance, two shadows could be obtained upon the plate, and by a trangulation of the two shadows the exact location of the foreign body was determined.

Considerable discussion followed, in which it was stated that no accident or injurious effect had attended the application of skiagraphy to the eye, although in many instances the exposure had been prolonged.

GENERAL SESSION.

SECOND DAY—JUNE 2D.

The second general session of the Association was called to order promptly at ten o'clock by the President, DR. NICHOLAS SENN. Following the reading of the minutes of the preceding day's session, the Chairman of the Committee on Arrangements, DR. H. A. HARE, made announcements referring to the adjourned meeting of the American Medical Editors' Association, and to a communication received from the Atlantic City Medical Society, conveying an invitation to the Association, and to the American Academy of Medicine, to become their guests at Atlantic City on Saturday, June 5th.

THE ADDRESS ON MEDICINE

was then delivered by DR. AUSTIN FLINT of New York. (See page 732.)

On motion of DR. COTTER of New York the thanks of the Association were tendered to Dr. Flint for his able and interesting address.

During the interval preceding the arrival of President McKinley, a number of questions of general interest were considered and acted upon by the members. The secretary announced the *personnel* of the Committee on Nominations. This committee has charge of the naming of officers and of deciding the important point as to where the next annual meeting will be held.

The report of the Executive Committee was then read, and showed that at the present meeting 950 different members were in attendance at the various section meetings, the largest number ever recorded in the history of the Association. It was resolved that in future, in order to expedite the registration of members at coming conventions, the secretary of the Association be constituted a committee of one to conduct in the city where a meeting is to be held, for three days prior to the commencement of the meeting, a bureau of registration for the attending delegates, and that he receive the sum of one hundred dollars annually for such services.

The next question which engaged the attention of the delegates was the selection of the place of meeting for next year's convention, but no definite conclusions concerning this matter were reached, the subject finally being referred to an appropriate committee for decision. Delegates from Tampa, Fla., Milwaukee, Denver, and Columbus, proposed these cities as meeting places for the Association in 1898.

There were many violent expressions of disapproval, and a great many hot discussions anent the question of railroad rates to members of the Association, which next was taken up for consideration. The charges made by the trunk lines to medical men to and from the meetings of the Association were characterized as extortionate and unfair, and several delegates insisted that a formal protest be entered by the Association against this alleged discrimination, although in the end the consensus of opinion seemed to favor dropping this subject as one which the Association was helpless to remedy.

There now ensued a lengthy discussion relating to the duties of the Nominating Committee, but comment was finally stopped when it was shown that this committee must first report in due order, after which the body of delegates might or might not accept the report rendered them. It was further announced that the Nominating Committee would meet immediately after the adjournment of the morning's session, and again during the afternoon, to take up the business delegated to it.

The conclusion of these business matters had just been reached when the arrival of the President of the United States was announced. The Chief Executive advanced toward the front of the stage, leaning upon the arm of President Senn and escorted by Governor Hastings, Mayor Warwick, Dr. William Pepper, Dr. H. A. Hare, and a number of distinguished cabinet officers and diplomats, who had accompanied the President from Washington. After an enthusiastic reception by the audience, which rose to greet him, President McKinley made the following brief, but impressive, address:

"Although summoned to this city for another purpose, I deem myself most fortunate to find this honorable Association in its semicentennial meeting on the same day, and I could not refrain from taking a moment from the busy program mapped out for me by Dr. Pepper—whose assurance I had before coming here that it should be a day of rest, which I have already begun to realize—I could not refrain from pausing a moment that I might come to this brilliant presence, meet the learned body here assembled, and pay my homage to the noble profession you so worthily represent. You have my best wishes and, I am sure, the best wishes of all our countrymen for the highest results of your profession, and my warm and hearty congratulations on this the fiftieth anniversary of your society."

President McKinley was followed by Governor Hastings, who regretted his unavoidable absence of the preceding day, and expressed himself as highly honored by being invited to address such a distinguished gathering of scientific men, to whom he desired to extend the most cordial welcome of the Commonwealth. During the course of Mr. Hasting's address, he took occasion to say: 'As a layman, all I can do in regard to such a gathering as this is to stand on the sidewalk and watch the procession pass by. Hence, I can only give you the opinion we common, everyday people have of you, and the one opinion we hold to tightly. We laud you for the code of honor that exists in your profession—a code which many can afford to imitate. Your powers are great and untrammeled and your opportunities vast. The lawyer in the forum finds an opponent worthy of his steel; the judge on the bench is bounded by law and by precedent; the statesman is influenced one way and another by conflicting considerations; but the physician, in his court, is judge, jury, advocate, prosecuting attorney—sometimes executioner, and from his court there is no appeal. In the sick-room the doctor is an autocrat, and in that forum the American medical profession has determined that there shall be no room for quack or mountebank."

After the speech of the Governor, Dr. Horatio C. Wood of Philadelphia made a vigorous and well-timed speech, which embodied a resolution protesting against the passage by Congress of the bill now pending to regulate the practice of vivisection in the District of Columbia. Dr. Wood said that if the one hundred thousand physicians in the United States would take this as a personal matter, and act accordingly with their respective Congressmen, their influence in crushing the measure would be irresistible; and added, that every medical man should see to it at once that active measures are taken in regard to this question, which has for its purpose the governmental control of all experiments upon live animals, and renders, in certain instances, the practitioner of vivisection liable to prosecution for criminal misdemeanor. Dr. Wood also remarked that he believed that there must be a special chamber reserved in Hades for the American Medical Association, which has passed good resolution after good resolution concerning this question without effect—for the way to hell is paved with good resolutions. The enthusiasm aroused by Dr. Wood's speech, and the immediate adoption of the contained resolution lasted for several minutes, and, after its subsidence, the meeting adjourned for the day.

SECTION ON PRACTICE OF MEDICINE.

SECOND DAY—JUNE 2D.

The Section met at nine o'clock, with the President, Dr. J. H. Musser, in the Chair.

The first topic was the sero-diagnosis of typhoid fever. Dr. W. H. Welch of Baltimore opened the discussion with some remarks on the

PRINCIPLES UNDERLYING SERO-DIAGNOSIS.

He called attention to the importance of a proper diagnosis of typhoid fever in its early stages, especially in the South, where the prevalence of malarial and continued fevers made the clinical diagnosis difficult. The discovery of the typhoid bacillus was not immediately followed by the practical results in diagnosis and treatment consequent upon the discovery of the diphtheria and tubercle bacilli. Numerous attempts had been made to obtain cultures of the typhoid bacillus; first, by the juice of the spleen, withdrawn by a hypodermic needle, but the results were unsatisfactory, and moreover the danger of injury to the organ was considerable; cultures made from rose spots were tried, but proved unsatisfactory. The results obtained with cultures made from the blood were more apparent, but large quantities of blood, as much as ten cc., were required. With cultures obtained in this way good results had been obtained in twenty-seven per cent. of cases. The Elsner method of obtaining cultures from the stools marked an advance in the diagnosis of typhoid fever, but it was disappointing in that its field of usefulness was limited.

The modern method of sero-diagnosis rested upon Pfeiffer's discovery of the principles of artificial immunity, but Pfeiffer's reaction, so-called, had nothing directly to do with the reaction in serum immunity. The principle of Widal's test was that by the addition of one part of blood-serum to ten parts of fluid containing the typhoid bacilli a reaction takes place whereby the bacilli lose their motility and clump together. It had been ascertained by Dr. Wyatt Johnston of Montreal that this power of producing agglutination of the bacilli was retained by dried blood as well as fresh. Dr. Welch was of the opinion that the best method of obtaining the blood was by an incision, or by pricking the lobe of the ear, rather than by blisters or the opening of a vein. This power to cause agglutination of typhoid bacilli possessed by the blood-serum of typhoid patients was also possessed by other serous fluids, as the serum from a blister or the fluid from a serous cavity. High temperature destroys the power of agglutination. It is an open question whether more importance should be attached to the loss of motion of the bacilli or to the clumping, some observers being of one opinion and others holding to the opposite belief. Young cultures, not over twenty-four hours old, should be used in the tests, though still younger (from six to eight hours old) had been used with good results in some cases. He prefers a middle course, and uses and recommends cultures fifteen hours old. As to the culture medium, it did not seem to matter very much whether agar or bouillon was used. The use of old cultures is, he thought, a distinct source of error. The degree of saturation of the test was another point which should receive considerable consideration. With a strong saturation the reaction is obtained more quickly, while with a weak saturation a time limit of about two hours should be allowed. It was his experience that the reaction was more marked in thermostat-cultures than in room-cultures. The degree of saturation recommended by Widal was 1 to 10 or 1 to 15, but later experiments had shown that dilutions of 1 to 40 or 1 to 50 gave better results. The criticism had been made that the colon bacillus gave the reaction in some cases as strongly as the typhoid bacillus, but where there was any doubt in the differential diagnosis of the two diseases the precaution should be taken of making the test with a weak dilution, as the colon bacillus had never been known to react with a dilution greater than 1 to 40. Another source of difficulty in some cases is the late appearance of the reaction. In the majority of cases it could be obtained in the first week, but undoubted cases of typhoid, confirmed by subsequent *post-mortems*, had failed to give positive reaction until the second or third week, and in a few cases the reaction had been absent altogether. The conclusion to be drawn from this was that a negative reaction was not conclusive evidence of the absence of typhoid. A third source of error was to be found in the fact that the blood of persons who had had typhoid fever retained the power of agglutination for a considerable time.

He suggested that the discussion might very profitably cover the question of the utility of dried-blood preparations as against fresh specimens. While the former method possessed many advantages as a more convenient method, it lacked the quantitative exactness of the latter procedure. He thought it possible, however, that the method of examination with dried blood might be so developed as to furnish a qualitative test.

In conclusion, he laid stress upon the importance of precision in the test, but at the same time he thought the method might be so simplified as to be available for the general practitioner, so that a fairly accurate test might be made at the bedside. For the more exact examinations completely equipped laboratories were necessary and should be at the disposal of the general practitioner, and the establishment of such laboratories by cities or States should be encouraged.

He was followed by Dr. Wyatt Johnston of Montreal, whose experience with the serum test covered over 600 cases, more than half of them typhoid. He believed that other diseases, such as cholera and bubonic plague, would be shown to have a reaction. He had been led to devise the method of dried-blood tests on account of the distance that specimens had to be sent for examination, and it was found that the dried blood could be sent by mail. Dried blood, he thought, clumped more readily than serum.

The alkalinity of the culture was important, as, if it were acid, the reaction would not take place. Young cultures should be used in preference to old cultures. With proper cultures, if loss of motion took place without clumping, it might be regarded as a pseudo-test, or if clumping took place without complete loss of motion, the reaction should also be regarded with suspicion.

Dr. R. C. Cabot of Boston gave a

CLINICAL REPORT ON SERO-DIAGNOSIS.

The statistics of foreign and American observers which he had examined gave the following results:

In 1826 cases of supposed typhoid, 1740 or 95 per cent., autopsy, confirmed the serum test.

In 1649 cases *not* typhoid, 1592 (or 96 per cent.) were negative. Total, 3475 cases; 95.8 per cent. of which confirmed the serum test; 2 per cent. proved incorrect.

In the 101 cases supposed to be typhoid 96 had given positive reaction, while 5 had failed. Three of these were seen late in the disease. One was seen early in the disease, and persistently gave a negative reaction, though the *post-mortem* examination confirmed the diagnosis of typhoid.

In 301 cases, with diagnosis other than typhoid, 300 were negative, while 1 gave a positive reaction. This was a case of pernicious anemia in a negro. He had been in the habit of using dilutions of 1 to 10, which Dr. Welch and others had asserted was too strong, but his time limit was from fifteen to thirty minutes as against two hours. He used the quick, or microscopic method, in all his examinations. The phenomena necessary to constitute a typical Widal reaction were a cessation of motion and a clumping of the bacteria. With one of these elements present, and the other wanting, he would not call the case typhoid. For the purposes of statistics he had taken the first day in bed as the first day of the disease, and thought this method of calculation open to no stronger criticism than any other method of reckoning the beginning of an attack. The length of time which a patient who had once had typhoid would continue to show the reaction was *sub judice*, the longest period reported being thirteen years. Again, the reaction might be intermittent. Thus, it might be present one day, absent the next, present the third, etc.

The susceptibility of the blood of negroes to the test had been frequently referred to. Dr. Geo. B. Shattuck had examined the blood of seventeen negroes, and got positive reactions in two cases not known to have had typhoid, and in three others who had positively not had typhoid. One of these was the case of pernicious anemia above referred to. He thought the more careful tests should be made in a laboratory, but sufficiently accurate tests could be made at the bedside by the physician with a knowledge of bacteriology. The Widal test was certainly of very material aid in the diagnosis of typhoid.

Dr. Bloch of Baltimore discussed the subject, giving a clinical report on sero-diagnosis. Microscopic tests were made by diluting sixteen times. By means of the hemoglobinometer the exact amount of dilution could be determined. Examinations made at the same time with both fresh and dried specimens showed the results to be practically the same. The earliest date on which the reaction was obtained was on the sixth day, the first day of the disease being considered as that on which symptoms compelled the patient to give up work. One hundred and seven examinations in 46 cases of typhoid gave a percentage of failure of 6.5 per cent. The culture medium used was slighily alkaline, though experiments were made with acid and neutral media. The acid medium did not show any precipitate of dead bacteria. Especial interest attached to the use of the test in cases of tuberculosis. By this means it was possible to make a diagnosis at an early date in cases of tuberculous peritonitis, tuberculous meningitis, and even pulmonary tuberculosis. He gave the histories of several cases in which the diagnosis between tuberculosis and typhoid could have been made only in this way.

Dr. Gerhardt of New York, in the absence of Dr. H. M. Biggs, read a paper on

THE SERUM TEST FOR THE DIAGNOSIS OF TYPHOID.

The serum used in the tests by the New York Board of Health was obtained from blisters. The microscopic test was used whenever possible, the macroscopic seldom being resorted to. Dilutions of 1 to 10 were generally used. Cultures eighteen to twenty-four hours old and of great virulence were employed. The cultures were obtained from Pfeiffer. The distinctness of the reaction was more marked with virulent cultures. The medium might be agar on bouillon. The tests made in the laboratory of the New York Board of Health were generally made with dried blood with a 1 to 10 dilution and a fifteen-minute time limit. If positive reaction is obtained from these tests a positive diagnosis of typhoid is made, but if agglutination did not occur in fifteen minutes or required a greater dilution a request for a further test with serum was always made. There was a decided advantage in the use of serum obtained from a cantharidal blister. Others had suggested a dilution of 1 to 30 or 1 to 50 and a time limit of two hours, but there did not appear to be any advantage in this procedure.

DR. S. S. KNEASS of Philadelphia gave a brief clinical report on sero-diagnosis. There did not seem to be any connection between the virulence of the disease and the character of the reaction. The earliest date at which the reaction was obtained was on the fifth day.

A CLINICAL REPORT ON SERO-DIAGNOSIS,

by DRS. J. H. MUSSER and JOHN M. SWAN of Philadelphia, was read by DR. SWAN.

The tests were made with dried blood. One hundred tests were made. In 9 the blood was taken from children under 15, and in the remainder from adults; 26 from females and 74 from males; age and sex seemed to exercise no influence. The cases were divided into four classes: (1) Typhoid fever during the disease; (2) during convalescence from typhoid; (3) where typhoid had been present at some time, and (4) where typhoid had not been diagnosed. In the latter, the reaction was absent in all cases, among which were cases of pneumonia, tuberculosis, and catarrhal fever. His conclusions were: (1) that age and sex exercise no influence; (2) that the reaction might be obtained during the occurrence of the disease as early as the seventh day; (3) the reaction disappeared at varying periods after the cessation of the disease; (4) the reaction could not be obtained from blood taken from patients suffering from diseases other than typhoid.

DR. MARK W. RICHARDSON of Boston read a paper, entitled

ELSNER'S METHOD OF DIAGNOSIS IN TYPHOID FEVER.

Elsner's gelatin-culture medium had first been prepared with carbolic acid, but as a result of later experiments he had been led to substitute potassium iodid, and the inoculation of this gelatin with the stools of typhoid fever had been very successful. No other bacteria than those of typhoid fever could be made to grow upon this medium. He had been led to examine this method of testing for typhoid fever partly from a desire to see whether it would confirm the tests made with the blood-serum, and partly to see whether it could be relied upon in those cases in which Widal's test failed to give a reaction. The result of his investigations convinced him that the serum test was preferable on account of its greater convenience in those cases where it gave a positive reaction, but cases in which the serum test had failed might show a typical reaction by Elsner's method. An examination of twenty-nine cases other than typhoid showed no bacilli by Elsner's method, or the isolation of bacilli was imperfect. The statement made that the typhoid bacillus was an ubiquitous organism was not confirmed by this method as the examination of the non-typhoid cases had failed to show the presence of the bacillus.

He summed up his conclusions by stating that the value of Widal's serum test was greater by reason of its simplicity, but a case which had failed to react to this method might still show the typical typhoid reaction if the stools were examined by Elsner's method.

DR. N. S. DAVIS of Chicago said that according to his experience ninety per cent. of cases of genuine typhoid gave a positive reaction to the Widal test, and in six per cent. there was a partial reaction. In three per cent. of cases there was no reaction whatever. The time at which the reaction could be obtained varied, and had no relation to the severity of the attack. In two and one-half per cent. of the cases with clinical diagnoses other than typhoid, a reaction was obtained, but in all of these cases there was a history of a prior attack of typhoid. In view of the fact that the reaction was not a constant attendant of typhoid fever, he suggested that it would be more correct to call it a symptom of typhoid fever, rather than a test for typhoid. It stood in the same category as rose spots. When present with other symptoms of typhoid, these were of value. So it was with the serum test; it did not furnish conclusive evidence.

DR. H. A. WEST of Galveston, Tex., said that the test promised to be of especial importance in his section of the country, and he hoped it would be the means of settling the vexed question of diagnosis between typhoid, malaria, continued fever, thermic fever, etc. Many of these fevers failed to respond to the salts of cinchona, and he was of opinion that such cases were typhoid in character, and it was to be hoped that this test would clear up the matter.

DR. J. B. HERRICK of Chicago gave the experience of Dr. George H. Weaver, of the Rush Medical College, in the diagnosis of typhoid fever by means of Widal's test. Several of the cases examined had all the symptoms of typhoid fever, and were also tuberculous, and in these the test failed to give a reaction. It was possible that this failure of the test was merely a coincidence, but it opened up the question whether this test was applicable in cases of mixed infection.

Immediately after the Section was called to order for the afternoon session the following officers were elected for the ensuing year: Chairman, Dr. Fiske of Denver, secretary, Dr. Albert Jones of Buffalo.

DR. A. P. OHLMACHER of Cleveland read a paper, entitled

OBSERVATIONS ON TWO EXAMPLES OF TYPHOID MENINGEAL INFECTION.

The author gave the clinical and pathologic aspects of the cases. The spleen weighed 220 grams; the ileum was the seat of typical typhoid ulcers, and a hematoma was located in the brain substance. Cultures taken from the meningeal hemorrhage gave perfect growths of the typhoid bacillus.

The second case was like the first, but owing to lack of time Dr. Ohlmacher gave a brief synopsis of the two cases. Both gave clinical evidence of typhoid fever with suppurative leptomeningitis. Bacteriologic investigation gave large numbers of typhoid bacilli and of no other micro-organisms, while an exhaustive investigation of other organs furnished undoubted evidence that the cases were true typhoid. In the second case there was broncho-pneumonia as a complication, and typhoid bacilli, as well as staphylococci, were demonstrated in the lungs. There was also endarteritis of the cerebral arteries.

The next paper was read by Dr. William Osler of Baltimore, entitled

RELAPSES IN TYPHOID FEVER.

In 500 cases of typhoid fever treated in Dr. Osler's wards at the Johns Hopkins Hospital, there was a percentage of 8 per cent. of relapses, about the same as that noted by Liebermeister, but a much larger percentage than that given by Murchison. Physicians were apt to shift the responsibility for relapses to errors of diet, but it was his experience that error in diet was not responsible in any considerable number of cases. The term "relapse" should be limited to those cases in which there were distinct evidences of reinfections after a period of apyrexia. Rise of temperature and return of dangerous symptoms without a period of absolute freedom from fever and serious symptoms should be regarded as an intercurrent relapse and not as a true relapse.

The sources of reinfection were as yet unknown, but a possible source was the lingering of the bacilli in the mucous membranes of the system. Chiari also made the interesting suggestion that the typhoid bacilli remaining in the gall-bladder might become the source of a secondary infection. In nineteen out of twenty-three cases of typhoid fever Chiari demonstrated typhoid bacilli in the gall-bladder. Relapses might be single, double, or rarely, triple. Several cases where there had been four or five relapses had been reported, and Dr. DaCosta stated that he had had a case with five relapses. As illustrating the length of time a case of typhoid fever might continue, he related the history of a case in which, after a period of six-weeks' freedom from fever, a relapse occurred and later a second relapse, so that the original attack, with the two relapses, covered a period of six months. The relapses were not always of a similar character in their inception as the original attack, as the text-books used to teach. The fever did not increase by gradual steps, as the original fever did, but, on the contrary, might go up with two or three short bounds. In other cases the relapse might be the counterpart of the original attack. He did not believe that the Brand system of treatment had anything to do with the occurrence of relapses. The Brand method was used extensively in the wards of the Johns Hopkins Hospital, and the proportion of relapses there was not excessive, and no one could say, from a study of those records, that hydrotherapy had anything to do with such occurrences.

PERICHONDRITIS OF THE LARYNX IN TYPHOID FEVER was the title of the next paper read by Dr. M. H. Fussell of Philadelphia. The case of which this paper was a report occurred in a man thirty years of age, who came under his observation in December, 1894. There was considerable hoarseness, and the patient afterward developed pneumonia. After eating an apple he was seized with stenosis, and an examination showed an edema of the larynx, Perichondritis of the larynx was diagnosed, and tracheotomy was suggested, but the patient refused to have the operation done. He died on the seventh day, and the autopsy showed that there was a large perichondrial abscess. Hoarseness, with respiratory distress were the only symptoms complained of. The complication was very infrequent, but its infrequency did not excuse physicians and writers for neglecting it. The only treatment was tracheotomy.

Dr. H. A. West of Galveston read a paper upon

THE RATIONAL ANTISEPTIC TREATMENT OF TYPHOID FEVER.

He was skeptical of the value of the so-called abortive treatment of typhoid, believing, as he did, that this was a self-limited disease. Nor did he believe in the efficacy of the antiseptic treatment, for before the disease attained its height the bacilli would have passed through the intestinal tract into the blood, and no drug known could reach them there. His experience with the various "cures" recommended had not been such as to commend them to his judgment. The rational treatment of typhoid—the only antiseptic treatment—"begins at the mouth and ends at the bed-pan." The way to give antiseptics was to withhold anything in the way of food or medicines that would require any antisepsis, and to use the tooth-brush frequently for the dislodgment of particles of food that, accumulating in the teeth, might decompose and cause fermentation. One of the chief difficulties in the treatment of typhoid was the gastric disturbance which was generally a complication, for in no disease, except cancer of the stomach, was the power of the stomach to digest food so weakened as in typhoid fever. In typhoid fever the stomach might lose half its bulk. Added to this decrease in the amount of gastric juice there was also a decreased secretion of hydrochloric acid. For these reasons we should abstain from loading down the stomach with solid food which it could not dispose of, and the condition should be treated by the administration of pepsin, hydrochloric acid, and the like, which, in this case, were antiseptics in the proper sense of the word. It was now proved that the typhoid bacilli left the mucous membrane of the intestinal canal early in the stage of the disease and entered the blood, so that the administration of antiseptic drugs could have no effect upon them. In the rational treatment of the disease was included a plentiful supply of water to flush out the stomach, and good results follow copious irrigations of the large intestine.

The next paper read was by Dr. J. N. Upshur of Richmond, Va., upon

THE TREATMENT OF TYPHOID FEVER.

The author went into details as to the method of disinfecting bed-pan, bed-clothes, keeping the patient clean, etc. He deprecated the use of alcohol in the early stages of the disease, except in the cases of persons accustomed to its use. The headache, he said, required no treatment, for it would disappear spontaneously in the second week. Phenacetin might be used with caution, but in general the use of the coal-tar derivatives should be sedulously avoided. Bromid of soda should be given for sleeplessness, and for coma vigil there was nothing that could take the place of opium. Somnolence should be treated with alcohol. Nausea and vomiting were rarely of sufficient severity to require treatment, but when existing, drop doses of the tincture of iodin were useful. Constipation was not an indication of grave intestinal lesions, and laxative drugs were to be avoided. Salol should be administered when the stools were offensive, and sordes called for the internal use of turpentine. Strychnin, with nitroglycerin, should be given for a weak heart. Peritonitis demanded treatment with tincture of opium, or hypodermic injections of morphin, but celiotomy was not justifiable, as the probability of saving the patient was very slight. The bladder should be emptied frequently, either naturally or by the catheter.

He severely arraigned the abortive and antiseptic treatments in vogue as being thoroughly irrational. Woodbridge's method for the abortive treatment of typhoid made claims of such brilliant results that physicians were startled, and made them ask themselves the question whether they had been groping blindly in the dark up to this time. He confessed that he had never tried the treatment because he regarded his patients as of too much consequence to be subjected to such danger. With his knowledge of the disease and of its self-limited character, he could not understand the wonderful results claimed for the treatment by its originator unless the age of miracles had returned. The testimonials which had been filed regarding the efficacy of the treatment were of no more value than similar testimonials for some "cancer cure" or "kidney cure," and other "cures" *sui generis*. Considering the claim of Dr. Woodbridge that he had never had a death from typhoid fever since using his method, was it not strange, he asked, that no writer and no authority had ever recognized the treatment?

SECTION ON SURGERY AND ANATOMY.

SECOND DAY—JUNE 2D.

The meeting was called to order by the Chairman, DR. SAYRE.

The first paper was read by DR. CARL BECK of New York on the

TECHNIC OF PNEUMOTOMY.

He said that particular attention should be paid to the details of asepsis. The skin of the patient and the hands of the operator should be very carefully prepared, as well as all instruments, dressings, and other materials which may come in contact with the wound. As a rule, the eighth rib is selected. An incision about five inches long is made over the suspected area upon the rib. The periosteum is raised throughout the entire circumference of the rib, and the section of bone removed by shears. The muscles, fascia, periosteum, and pleural membrane are ligated by silk ligatures, which are passed by means of strong needles. The pleura is then divided. If the lung collapses the incision into the lung must be delayed for a day or two. If the lung moves freely, sterile gauze may be packed about the region to be operated upon to avoid infection of the cavity from escaping pus. If palpation fails to disclose the accumulation, the exploring needle may be thrust into the suspected area. If this does not reveal pus, then the slightly heated Paquelin cautery may be introduced in the direction of apparent trouble. After the cavity has been opened, irrigation and exploration should be avoided, as troublesome hemorrhage might result. A narrow strip of iodoform gauze is introduced into the cavity for drainage.

The speaker has operated upon four cases of lung abscess and all of the patients recovered. Anesthesia should be employed only if the pulse be strong enough, which is rare in these cases. Chloroform is usually to be preferred to ether if an anesthetic is used. In only one of the cases was the diagnosis of lung abscess made before operation. Two of the four cases had been diagnosticated as pyothorax, and the fourth was thought before operation to be a subphrenic abscess.

W. B. DE GARMO of New York reported

TWO HUNDRED AND FIFTY BASSINI OPERATIONS FOR THE CURE OF HERNIA, WITHOUT MORTALITY.

The 250 operations were performed on 216 patients. One patient was five months old and had a strangulated right scrotal hernia. There was also a scrotal hernia on the left side. Age is no contraindication to this operation, as the results have been as satisfactory in the aged as in the young. The success of Bassini's operation depends upon the removal of all superfluous tissue from the cord, and upon the formation of a new muscular floor for the canal. In the suppurative cases the infection seemed to have been superficial. In the cases in which the vitality of the tissues has been lessened by the pressure of a truss, infection is particularly apt to follow operation even when the most careful antiseptic details have been carried out. Contrary to the expectation of the speaker, the cases which suppurated had not shown a greater tendency to recurrence than had those which ran a sterile course. Silkworm gut was employed for the buried sutures in the earlier cases, but as the sutures caused irritation in a number of instances its use was discontinued and kangaroo tendon was substituted. The latter has proven entirely satisfactory. The author believes that ninety-five per cent. of the patients operated upon by this method will be cured even if observed for five years. Of the 250 operations there have been six recurrences and three patients are at present under suspicion. It has been possible to explain the recurrence in every instance. Two were the result of violence some time after the operation. One was the result of a varicocele that was not treated at the time of the herniotomy. In one case the muscles were in such an advanced state of fatty degeneration that the sutures failed to hold, and in two cases the patients took ether very badly, and the recurrence was due to undue haste in terminating the operation.

In the discussion **DR. H. O. MARCY** expressed his belief in a congenital defect as the cause of hernia. He thinks the presence of the infundibular process of Broquet allows of a slight protusion which gradually increases. He has operated on a child three months of age, and upon an adult in the eightieth year of life. He thinks that over ninety per cent. of his cases have remained cured.

DR. OCHSNER called attention to the patients with hernia who come for treatment at the two extremes of life. He has observed that patients who have worn a truss for years find that the hernia is not retained when the tenesmus and dysuria of prostatic hypertrophy become pronounced. In these cases he has adopted the operation recommended by Dr. White of Philadelphia, namely, either castration or ligation of the cord, with relief of the vesical symptoms, when the truss would again control the hernia. In the case of hernia in children he has frequently found the straining caused by phimosis to interfere with the cure of hernia, and in these cases the operation of circumcision has enabled him to cure the patient without a hernial operation.

In closing the discussion, Dr. De Garmo said that in the case of undescended testicle, if the cord is too short to bring the organ down into its proper position, he prefers covering it up with the muscular layer, outside of the peritoneum. He has had satisfactory results by this method.

A paper on

ANIMAL SUTURE, ITS PREPARATION AND TECHNIC OF APPLICATION,

by **DR. H. O. MARCY** was read by title.

After the meeting was called to order for the afternoon session, the following officers were elected for the ensuing year: Chairman, Dr. John B. Murphy of Chicago; secretary, Dr. W. D. Rodman of Louisville, Ky.; executive committee, Drs. J. Ransohoff of Cincinnati, C. A. Wheaton of St. Paul, and Reginald H. Sayre of New York.

DR. R. HARVEY REED of Columbus, O., read a paper on

ANCHORING THE KIDNEY.

The condition of floating kidney demands our attention, because it is apt to lead to hydro- or pyonephrosis. The use of abdominal bandages and pads of all sorts the speaker believes to be worse than useless. He has shown by experiments on the cadaver that no amount of pressure which could possibly be borne without injury will keep a movable kidney in place.

The operation which he advises is as follows: An incision two or three inches in length is made in the abdominal wall, anteriorly, over the normal situation of the kidney. Two or three fingers are introduced into the abdomen and the kidney replaced. The intestines are displaced to the inner side, and a suture of silk or other material, attached to a special needle six inches in length, is passed through the kidney-substance between the eleventh and twelfth ribs out through the lumbar muscles and skin. The needle is unthreaded and withdrawn. The other end of the thread is passed in the same manner a short distance from the point traversed by the first. The two ends of the suture are then tied over a small pad of gauze in the loin. These sutures are removed between the tenth and the fourteenth days.

He prefers this method to the usual lumbar operation on account of the ease and celerity with which the operation can be performed and the security of the results.

In the discussion **DR. THOMAS** of Pittsburg described a method of anchoring the kidney by splitting the fibrous capsule and dissecting flaps in each direction by means of which the organ may be very firmly fixed. This is done through the usual lumbar incision.

DR. J. B. DEAVER of Philadelphia read a paper on

THE COMPARATIVE MERITS OF DIFFERENT OPERATIONS FOR STONE IN THE BLADDER.

He prefers litholapaxy in all cases in which it is possible to introduce the necessary instruments. He operates, when possible, for stricture, and proceeds at once with the litholapaxy. In strictures of the deep urethra that require cutting, he performs the operation of perineal lithotomy and divides the stricture at the same time. If the stone is too hard or too large to crush he would perform suprapubic cystotomy.

DR. DEFOREST WILLARD and **DR. A. W. GOODSPEED** of Philadelphia gave a demonstration of the technic of the Röntgen rays, with its practical application to surgery, which was illustrated by means of stereopticon views. **DR. GOODSPEED** described the modern apparatus and its manipulation, and showed a number of views of normal structures which he claimed surgeons should be familiar with before they can properly interpret skiagraphs of abnormal conditions.

DR. WILLARD showed a number of photographs illustrating a number of conditions resulting from diseases and accidents. He called attention to the difficulty of interpreting many of the photographs when first presented. He did not think the skiagraph should be accepted at present in medico-legal cases in preference to means of examination which are better understood and more reliable. In common with other surgeons, he has made use of the X-rays in cases of fractures and dislocations, foreign bodies, bony outgrowths, inflammatory affections of the joints, etc.

SECTION ON OBSTETRICS AND GYNECOLOGY.

SECOND DAY—JUNE 2D.

The section convened at nine o'clock and was addressed by **DR. AUGUSTUS GOELET** of New York on

THE TECHNIC OF VAGINAL SECTION, EXCLUSIVE OF HYSTERECTOMY, FOR DISEASED APPENDAGES AND SMALL PELVIC TUMORS.

He claimed that anything that will lessen shock, reduce the mortality, and shorten the time of the operation, is to be desired, and all of these can be claimed for vaginal section. In certain conditions this operation is much to be preferred, although in some cases abdominal section is the better operation. The advantages of the vaginal route are: (1) The patient more readily consents to this operation, and therefore the diseased condition can be removed earlier. (2) It is of service when the condition of the patient does not seem to be grave enough to require the more formidable operation of abdominal section. (3) It is useful when an exploration of the pelvis becomes necessary in order to clear up a diagnosis. (4) The vaginal operation is best when subsequent drainage of the pelvis is required. It is applicable for small pelvic tumors, ovarian cysts after they have been evacuated, pyosalpinx, hydrosalpinx, and hematosalpinx; for the removal of small fibroids by myomectomy, for extra-uterine gestation, and for pelvic hematocele. The technic in the case of cysts is as follows: The pubes and vulva are thoroughly washed and shaved, and the vagina scrubbed out and irrigated. The patient is then placed in the exaggerated lithotomy position, the cervix is seized and dragged down by a volsellum forceps, and the uterus curetted and packed with iodoform gauze. The cervico-vaginal fold is the guide to the incision, which, starting at the central point, extends half way round the cervix to either side. Having opened the vaginal mucosa, the dissection is continued by means of the blunt edge of the knife. No effort is made to control the hemorrhage from the small vessels that may be cut, until the peritoneal cavity is opened. Then the peritoneal and vaginal fold are united by means of sutures, and the bleeding thus perfectly controlled. The pelvis is then explored and the diseased structures are drawn down, enucleated, and the pedicle ligated, the specimen being removed intact if possible. If it is too large to permit of this, it is drawn down as far as possible into the incision to avoid contaminating the surrounding pelvic structures, and then tapped and finally enucleated.

Dr. Goelet seldom uses a trochar. Irrigation of the vagina should be avoided if possible; when it is employed he uses only normal salt solution for the purpose. Prolapse of the intestine is prevented by means of gauze packing. Solid or semisolid tumors are more difficult of removal. In the case of larger fibroids he prefers abdominal section, although even these may be removed by morcellation. If the anterior wall is prolapsed in any given case the bladder must first be explored by a sound in order to precisely locate it and thereby prevent wounding of that viscus. The cervix, in opening the anterior cul-de-sac, should be drawn back and the incision made to hug it whereby wounding of the bladder may be prevented. If drainage is not required, the vaginal wound may be closed by sutures, although this is not necessary. If deemed necessary, a strip of sterilized gauze may be carried through the incision and packed around the stump to prevent the formation of adhesions to the intestines. This may be left in place for twenty-four hours and then withdrawn in part. The following day the fresh vaginal gauze and the remainder of the pelvic gauze is withdrawn. Union takes place in six days and the convalescence is usually uninterrupted.

DR. H. A. KELLY of Baltimore agreed with Dr. Goelet in all of his conclusions. He thinks vaginal section is preferable in all cases of relaxed vagina, or when the patient prefers it to the abdominal route. By this method he has treated small ovarian cysts, dermoid tumors, and pelvic abscesses almost without exception. He has tabulated nearly 100 such cases. He prefers here, however, the method of Edebohls, in order to maintain a sufficient avenue for free drainage. He secures this by means of an elliptic incision with the removal of a large crescentric piece of tissue. He also scrapes out the lining membrane of the abscess and then packs it with gauze, thereby securing healing by granulation without pus-formation. For extra-uterine pregnancy he prefers this method, especially in the old ruptured cases with pelvic hematoceles. He holds himself ready, however, to go ahead with an abdominal section in case of extreme hemorrhage. In the case of cystic ovaries, and the like, he prefers Pryor's method of inspection of the pelvic cavity, the patient being elevated and long retractors being introduced. He excludes from this treatment all cases in which conservative operations are intended. It is also not of service in cases requiring delicate manipulations.

DR. JOSEPH EASTMAN of Indianapolis has been interested in this method for some years. He emphasized some points in the technic and dwelt on the importance of Sims' posture in all vaginal operations. He said that he could not be induced to operate in the exaggerated lithotomy position. The cervix may be disinfected in the manner suggested in the paper, but still it is a source of infection and may infect the wound. He has never seen prolapse of the intestines occur when Sims' posture was used after a piece of gauze was introduced; nor in this position will infecting material pass up into the wound. He thinks a handlight is of more service than a headlight. He always has his assistant over-dilate the rectum first, so that the vulvar space is increased posteriorly. The Sims' speculum then retracts the relaxed tissue much more readily than other speculæ will do.

DR. HAGGARD of Nashville referred to the Graffe method of traction-ligature. The only objection to it, he said, was the difficulty met with in its introduction. Graffe first used this ligature in Emmet's service, and it has been used with success in other conditions in general surgery. Anterior colpotomy he claimed is at times more useful than abdominal section in fat women.

Dr. Goelet, in reply, said that the technic described in the paper is not meant to apply to incision for pelvic abscess. He admits that it is easier to do conservative work through an abdominal incision, and yet he can do some of it through the vagina. Infection from the cervix is more imaginary than actual. The cervix, by this method, is generally carried well out of the way. He did not see the advantage of the Graffe knot, and has always preferred the dorsal position for vaginal incisions.

DR. E. E. MONTGOMERY'S paper on

THE TREATMENT OF PUERPERAL SEPSIS

was read by title.

THE DESTINY OF VAGINAL HYSTERECTOMY FOR MALIGNANT DISEASE

was the title of a paper read by DR. LESTER C. HALL of Kansas City, Mo. He offered conclusions gleaned from personal experience and from the literature of the day. No tissue, he said, is more prone than the uterus to take on malignant degenerative processes. Lacerations due to childbirth and the presence of irritating discharges predispose thereto. In addition, irregular flow is believed by many women to be of common occurrence, and hence malignant conditions are often overlooked. Even a fetid discharge does not always excite apprehension and in these cases the invasion of the surrounding tissues not infrequently prevents the adoption of the operation of hysterectomy. As a result many of the cases that are thus presented are inoperable, at least by the vaginal route. The removal of infected glands and the surrounding infected tissue is, in his mind, impossible by the vaginal route; hence, we are compelled to look further for other methods of dealing with malignant disease. The method that admits of thorough inspection of the diseased parts and thus facilitates their removal will become the best method. He believes that vaginal hysterectomy will shortly be restricted to cases of early carcinoma limited to the cervix. Clarke's method is probably the operation that will become generally adopted for more advanced cases. The objection that has been advanced that this operation is too long and too tedious, will be overcome by the practice that makes perfect.

DR. JANVRIN of New York said he had been immensely interested in vaginal hysterectomy for the last fifteen years and had performed the operation many times. He is aware that many of the patients do come too late for cure, but he believes that the people are becoming educated in the matter and now are coming earlier than formerly. In the majority of his cases the operation has been done in the early stage before systemic infection has occurred and the value of the operation of vaginal hysterectomy he believes depends entirely upon this point. If the patients are seen before general infection occurs such cases can be operated upon thoroughly and with success. Thirty-three and one-third per cent. of his cases are living now at periods of three to fifteen years after the operation. If the disease has extended beyond the cervix, and much beyond the endometrium and into the peritoneal covering, these cases are not the subjects for vaginal hysterectomy nor for any other radical operation.

DR. EASTMAN does not believe vaginal hysterectomy is destined to obscurity. The relief from the symptoms and the prolongation of life is sufficient to justify the operation in each and every case, no matter how far advanced. By such means he believes we may also educate doctors to recognize the value of the earlier operation so that they will bring their patients at the proper operative period. The incision into the vaginal tissue should be free and should extend well beyond the diseased area. He also brings the pedicle down and fixes it within the wound where he can promptly see any return of the disease.

DR. DUFF of Pittsburg agreed with the last speaker in all that he had said. In operations done by him through the vagina he has had patients live from three to thirteen years; without the operation, they will invariably die within a year. The great point in the question is the fact that in the vast majority of cases the women have not only been careless themselves, but they have been informed by their attending physician that they were suffering merely from a change of life. He has never seen a woman who was healthy have any menstrual trouble during the period of the climacteric. He would impress upon the public the importance of frequent vaginal examination of all child-bearing women.

DR. MASSEY of Philadelphia desired to report a new and most valuable cure of cancer, *viz.*, the cataphoretic method, whereby mercuric oxychlorid can be diffused throughout the tissues and thereby destroy the malignant growth. He has the record of four out of eight cases that were so cured. He believes that this method will replace the vaginal operation. In employing it he uses, if necessary, a current of the strength of 1000 milliamperes.

DR. MARCY of Boston said that if we accept the theory that cancer is at first a local and then a general condition, we can have but one answer to the question as to the operative treatment, and that is, that vaginal hysterectomy is the proper procedure to adopt. Scarcely more than a decade since we first held that such an operation was the correct one, but the question now is, what are its limitations? The trouble formerly was that the local physician first tried his own application until the case had progressed too far for operation. This is fortunately not so common now. If the disease has become disseminated throughout the broad ligament it is quite another matter, and the operation is not possible.

DR. BOVEE of Washington entered a plea in the same direction that Dr. Marcy had indicated. Vaginal hysterectomy in his experience has been very beneficial in late cases. He has operated in such cases and some of the patients are still living, two years after the operation. The surgical operation accomplishes at one application what electricity does only after repeated applications, and the latter method permits of the possibility of the further spread of the disease in the intervals of treatment.

DR. DUDLEY of New York said that if the patient came with the uterus free, vaginal hysterectomy is the proper operation, but if there is intrapelvic disease and the uterus is fixed, or if the vaginal wall is involved, then an entirely different operation should be performed. The limitation of the disease must be first determined; if it is not limited to the organ the combined method should be used in order to accurately ascertain the extent of involvement. The destiny of vaginal hysterectomy will depend on these points.

DR. FREDERICKS of Buffalo called attention to the different rate of growth of various cancers. He has recently seen a case in which the cervix had been the seat of the growth for over seven years, and there is still but little extension. In any given case it cannot be determined whether the growth is going to be rapid or slow.

DR. KELLY believes that the destiny of vaginal hysterectomy is that it will be performed by the abdominal route, by which means the large wings of the broad ligaments can be removed and all the involved tissues dissected out. Preliminary catheterization of the ureters is the one essential feature in this operation to enable one to keep these organs under the finger and thereby avoid injuring them. He believes that many physicians cannot recognize cancer of the uterus even in its late stages. The immediate mortality of the Clarke operation is slightly greater than that of vaginal hysterectomy, but the ultimate results are better. He would insist upon repeated examinations of women who have borne children, beginning within four months after labor, and repeated at suitable intervals.

Dr. Joseph Price said that a discussion is very much smoother than an operation. In inoperable cases of carcinoma of the uterus, he uses the curette and the cautery, and the probability is that the patient will live for eighteen months or two years, or even more. He now operates on any case of cancer which comes to him. He prefers the vaginal route to all others. He has repeatedly removed half the vagina in these cases. He is also in favor of the use of clamps, which can be passed further away from the uterus than can any ligature. As to recurrences of the disease, they are usually to be found in the bowel and bladder, and in these cases the suffering is intense. Many of the cases which are operated upon, and in which the disease fails to recur, are in reality simply cases of erosion of the cervix.

The Nominating Committee, through Dr. Eastman, chairman, reported the following officers for the ensuing year: Chairman of the Section, Dr. Joseph Price of Philadelphia; secretary, Dr. Lester Curtis Hall of Kansas City, Mo.

Section on Diseases of Children.

Second Day—June 2d.

Dr. Louis Fisher of New York continued the discussion of diphtheria antitoxin by saying that he had been skeptical concerning antitoxin on account of the profession's experience with tuberculin. What he saw in Berlin in 1894, was only a repetition of what he had heard from Behring in 1891. In the summer of 1896 at the Children's Hospital, Bazinski told him that he no more dreaded diphtheria now than he did a case of ordinary constipation.

As the dose of castor oil in a given case of constipation depends on the cause, so does the antitoxin dose depend on the case. Some he saw, got well with 6000 units, others with a smaller dose, but as a rule a round dose of 2000 units is indicated in malignant cases.

All will agree that there is no fear as to the results. The membrane is thrown off in twenty-four to thirty-six hours. He had seen a case of malignant diphtheria, with fetor temperature of 101° F., which is considered a malignant low temperature, and pallor from the drenching of the system by septic elements. Here, as was his rule with all cases, the imperative indication was met first, the asphyxia relieved by a tube, and the antitoxin was then administered with little fear of the result if the dose is repeated when indicated.

He said that Dr. Jacobi had not been anxious to use the serum till others had tried it, but now, as he stated in his book, he almost considered it a crime not to use it.

Dr. Arnold of Pennsylvania had begun the use of antitoxin early and for a time all was auspicious; there were prompt manifestations of its beneficent influence in the separation of the membrane; the prognosis was in a measure positive, proved by the changes observed in the patients after an injection. After a year's use he had seen a case of diphtheria, used antitoxin, and the child died, though, before he saw it, the case was regarded as one of simple tonsillitis. Another case had an abnormally slow pulse—50, 45, 40—and death followed, and in another, death ensued from suppression of urine. The serum administered to these patients was from a reputable and prominent manufacturer, all of the same series and labels. The bacteriologist of this house had been loath to give any explanation of the occurrence.

Dr. Cook of Chicago stated that he would reply to the statement often made, that all cases recovering were evidence of a mistaken diagnosis. He reported a series of eighty-nine cases, with bacteriologic diagnoses, without a death, without intubation, and without a second dose of antitoxin. Perhaps fifteen were laryngeal cases, and several were severe. The necessity for intubation is like a boy with a whip driving a horse, he punishes the horse because he has it, so intubation is often done just because we have a tube.

Dr. Grafey of Ohio said the laity as well as the profession at large are shy of statistics when they are so large. He had seen an epidemic of diphtheria in which the laryngeal cases died promptly under ordinary treatment. The statistics, his own and other cases included in the series, showed 53 deaths and 47 recoveries. In another series he used antitoxin only for laryngeal cases, fourteen of sixteen patients recovered. He emphasized the importance of giving antitoxin early and repeating the dose if indicated.

Dr. McFarland of Philadelphia had administered some 3000 injections to animals. He mentioned that fact, as the trend of the discussion led to the opinion that the use of antitoxin was founded on an empiric basis. It rests on a scientific basis, worked out in the laboratory.

A definite amount of any serum protects a guinea-pig against a definite amount of toxin; five times the amount of toxin is neutralized by the same amount of antitoxin. It is certainly and absolutely an antidote to the diphtheria toxin.

Dr. Cox of Chicago emphasized the fact that the profession often neglected to ask at what temperature the serum was kept. It has been clearly demonstrated that it must be kept in a cool place, as it deteriorates at a high temperature.

Dr. Mayer of Johnstown, Pa., answered Dr. Coughlin, the essayist, who suggested punishment of children, if all else failed, in inducing them to take nourishment. The depressing effect of the punishment, added to the depressing effect of the disease, is much against recovery. He believed if ice cream is not too sweet it will do no harm. Stimulation, in his opinion, is essential. The purpose, limitation, and dosage of antitoxin apply as well to stimulants.

Dr. Withersteen of Minnesota reported twenty-five cases, with one death. In one family with ten children he had controlled the spread of it by isolation, and though the first patient was almost moribund, with a pulse of 140, it had recovered under use of antitoxin. New cases developed by the placing of a child in the infected room to sleep, and this emphasized the inefficiency of our present methods of disinfection. The prophylactic dose was administered in two cases with effect.

DR. HOUGHTON of Detroit said that in a series of 800 cases in Detroit, the antitoxin had been administered to 400, with a mortality of twelve and one-half per cent. in patients so treated, and thirty-four per cent. in those not so treated. He reported a case of sudden death in a young man, from fright, when seeing the preparation for the injection before it had been given. He had seen two epidemics in the Children's Free Hospital there; three cases, and thirty-four children exposed, with prophylactic injection limiting the cases to the original three, except in the house physician, who contracted the nasal form of the disease. Three subsequent outbreaks in different months were also checked. Three of the children to whom it was administered were three weeks of age. Only slight urticaria was noted in a few cases.

DR. LOUIS FISCHER of New York exhibited

A NEW INTUBATION TUBE AND INTRODUCER.

The recommendations are that he thus does away with an obturator and substitutes a rubber tube for the ordinary metal tube. The tube has been used in nine cases with perfect satisfaction, remaining in position in one case seven days. The tubes are so cheap that they can be burned after each case.

DR. ELLA E. BARNES of Birmingham, Ala., read a paper on

SOME CAUSES OF CONGENITAL DEFORMITIES.

She said more stress should be laid on preventative medicine. Deformities at birth are, as a rule, accounted for by some superstition, where they can and should be explained by anatomic reasons. Early injury to cells may result in large deformities. Later disturbances should not be considered true malformations.

DR. ANNIE S. DANIEL of New York read a paper, entitled

TUBERCULAR MENINGITIS.

The life of the patient, she said, does not depend on an early diagnosis, as no remedy has been found for the disease. Younger children presented greater difficulty in diagnosis. Lumbar puncture is negative, as a rule. Forty-nine cases were reported, with autopsies in six. They were divided into those under two years, twenty-two cases, and twenty-seven that were over two years. Previous acute illnesses were observed in the majority, and were chiefly intestinal troubles, exanthemata, etc. In many cases a fall is the result of the malady, and not as a cause, as generally considered, and should be termed a premonitory symptom.

A paper was read by DR. THOMAS W. MARVEY of Orange, N. J., upon

MENINGITIS, A COMPLICATION OF MEASLES.

He spoke of the rarity of mention in medical literature of meningitis occurring as a complication of measles. Brief mention was made of all the cases on record of this combination, and the history of an interesting case of meningitis complicating measles was given.

DR. A. E. DAVIS of New York read a paper, entitled

THE CLINICAL IMPORTANCE OF THE EYE SYMPTOMS IN ARRIVING AT A DIAGNOSIS IN MENINGITIS IN CHILDREN.

As conveyed in the title, the paper was to direct attention to the eye symptoms of meningitis. Many of the eye symptoms of importance in meningitis are largely motor, which may be observed without the aid of the ophthalmoscope. Thirty-eight cases of meningitis were reported; thirteen, simple leptomeningitis; twelve, cerebrospinal meningitis; thirteen, tuberculous.

In the thirteen cases of leptomeningitis there were no eye symptoms in eight. The patients with purulent meningitis, in which no eye symptoms were present, showed, *post-mortem*, the meninges covered with pus and extensive adhesions between pia and dura mater.

In the cases of cerebrospinal meningitis, eye symptoms were absent in seven. Loss of iris reflex was present in one, dilated and fixed pupils in another, strabismus in a third, and in the fourth the pupils were dilated, but reacted to light.

No eye symptoms were present in eight of those having tuberculous meningitis; pupils were dilated in one case, in one the left pupil only was dilated, in one there occurred extensive ulcerative keratitis and conjunctivitis, and in another dilated pupils and lagophthalmia. No tuberculous condition of the eye was seen in any case.

Whether symptoms are primary or secondary must be decided. The motor and visual disturbances should also be differentiated.

Cerebrospinal meningitis gives as prominent symptoms paralysis of sixth, third, fourth, ophthalmic division of fifth, and seventh nerves, with nystagmus and ptosis from cortical lesions. Choked disk, optic neuritis, perineuritis, plastic and suppurative iritis, conjunctivitis, edema of the lids, hemianopsia, as a cortex or tract lesion.

In simple or leptomeningitis the eye symptoms are of more importance in determining the diagnosis than in the cerebrospinal type. The most reliable is optic neuritis. Many cases occur as sequels to middle ear suppuration of a chronic character. Metastasis is another frequent cause. The neuritis is always consecutive to a complicating meningitis.

In tuberculous meningitis the eye symptoms are largely the same as in the simple form.

A paper was read by DR. CHARLES W. BURR of Philadelphia, entitled

HYSTERICAL CONTRACTURES IN CHILDREN.

Hysteria, he said, might be considered very frequent from literature, when in truth it is very infrequent, especially in children.

A case of pseudospinal disease was reported in a child six years old, with pain along the spine, trouble in walking, and lateral curvature. Pain on deep pressure was not present when the child's attention was withdrawn. Reflexes were good and there was no paralysis. The case was hysteric. Rest, isolation, and a milk diet cured the patient.

The second case was in a female of nine years. Barking like a dog and violence with irregular shrugging of shoulders were the first symptoms. These disappeared during sleep. No paralysis nor contraction of the field of vision was discovered. The same treatment was successful.

Girl, aged eleven years, had typhoid fever, pain in the hips and flexion of the thighs and legs. Force did not overcome the contracture. Pain was caused by passive motion. No palsies were present. All contractures relaxed, save in right hip, under anesthesia. Isolation and passive movements cured all but the right hip in which there was organic disease.

Dr. A. C. Cotton of Chicago read a paper upon

INFANT FEEDING.

He asked, How shall we feed the baby? If it takes the breast and is doing well let it alone. If not doing well find wherein the error lies; ascertain if the mother's milk can be made adequate, examine as to total amount, and its various ingredients. Analysis of the mother's milk must be made.

Marchand's and other tests for estimation of fat in milk was found to be wanting. Holt's method is not practical. The best method is Babcock's, although it is clumsy. By taking specific gravity and amount of butter fat we have two factors. Allow equation—total solids equal ¼ of specific gravity, taking last two figures, and $\frac{6}{5}$ of fat plus 14.

If milk shows marked departure from normal try to regulate, meanwhile, pumping breast and testing frequently.

The multitude of artificial foods is evidence that we have no substitute for mother's milk. The ideal one must contain all elements of mother's milk, in like proportion. Total quantity must equal that obtained from the mother. That it contain the antiscorbutic element, and be always fresh, are essential.

Dr. Charles G. Kerley read a paper on

THE USES AND LIMITATIONS OF CONDENSED MILK AS AN INFANT FOOD. (See page 736.)

The Nominating Committee reported for Chairman, Dr. J. P. Crozer Griffith of Philadelphia; Dr. Edwin Rosenthal of Philadelphia, Secretary.

Section on Neurology and Medical Jurisprudence.

Second Day—June 2d.

The entire session was devoted to the reading and discussion of a very scholarly paper by Dr. Charles K. Mills of Philadelphia on

APHASIA.

Dr. Mills said: "I would enlarge the zone of language, as given by Dejerine, so as to make it include a center for concepts in the third temporal convolution, and possibly extending over more of the mid-temporal region, and, in addition, a graphic motor center in the caudal portion of the second frontal convolution. This zone of language unquestionably has its deepest organization and highest development in the region encircling the Sylvian fissure, for here is situated the auditory center, out of which the others may be said to have been evolved, and the motor, articulatory and visual centers which are next in importance, as they have been next in development; but it must also include those portions of the brain in which concepts originate, and, if the views of those who believe in separate graphic motor centers are correct, also those parts in which graphic motor images are represented. Moreover, language on its productive side may result from impressions received through any of the sensory gateways. Written and spoken language is evoked not only by auditory and visual images, but also through olfactory, tactile, gustatory, and spatial percepts, so that in a lesser degree the centers for touch, taste, smell, and other senses than those of audition and vision, and the tracts which associate these centers with the motor side of the brain, may be regarded as properly constituting, at least at times, a part of the zone of language. . . .

"Ross held that in passing from thinking by precepts to thinking by concepts, and from that to thinking by abstracts, no new centers are introduced, but only complication upon complication of the precept center or centers. The evolution of such a complex mechanism, however, necessitates the enlargement of the sensory precept areas, and this would have as its particular result the development of a new structural area intercalated between the receptive and the emissive portions of the brain, but more closely related to the former than to the latter. When lesions occur near, but not in, the sensory inlets, a disorder of language, conceptual in character, results. The portions of the cortex, the activity of which is related to thinking by concepts and abstracts, can be reached in the word-blind through the eye, in the word-deaf through the ear, and in those who cerebrally are both deaf and blind through the nerves of the other special senses. If this be so, in some region of the brain the structural lines must converge, or at least commingle, and cross on their way from the sensory centers to the motor centers, and this area, however restricted or extended, constitutes the *concept region of the zone of language.* The symtomatology which results from a lesion of this concept area is that which was present in the case reported by the writer as localizing this naming or concept center. The patient was unable to recall through either the sense of sight or that of touch the names of objects, the uses of which she evidently recognized."

Dr. Mills referred to a case the symptoms of which seem to bear out the idea of the existence of a separate graphic center. This patient has disturbances of language which have been of gradual development. He is not word-deaf, he is not a true motor aphasic, but he is a total agraphic. He is only able to copy mechanically printed letters or words. At times he seems to have great difficulty in recognizing words or special letters; so that it is difficult to decide whether he is suffering from literal or word-blindness.

According to Freud, the so-called centers, placed in the periphery of the zone of language, are only points farthest removed from other centers, where, therefore, the fibers of association are least abundant and where a localized lesion is more likely to include only a single element of language. But in Dr. Mills' opinion, mistakes are likely to be made as regards both centers and associating systems. The use of the term "centers" in neurology, while important, is largely a matter of convenience. A center is simply a collection of gray and white matter which represents, physiologically, some action, function, or faculty. Its destruction causes loss or impairment of function, and its irritation leads to excess of functional activity. Centers, like cells, are too often considered as points where force originates. They are best regarded simply as points in reflex arcs or in systems of association, interference with which causes definite phenomena. Impulses are transmitted from nerve-cell to nerve-cell by contact, and not by continuous fibers over distances indefinitely prolonged. It is an error to make too great a distinction between the effects of lesions of association tracts and of centers. Center and tract each plays its own important *rôle*, and it is for us simply to learn, through clinical and pathologic observations, the results caused by their lesions when these are of definite size and in definite locations.

DR. F. X. DERCUM of Philadelphia opened the discussion. He agreed with Dr. Mills that the subject should be approach from a very broad and general standpoint. He had many years ago himself alluded to the various centers of the cortex as gateways of ingress and egress to the general cortex, and also contended against the consideration of centers as centers. He, Dercum, thought it not impossible that there is a concept or name center, but he did not regard it as proven. As to the graphomotor center, the same would seem to be true. He agreed with the author of the paper that the apparatus must be looked upon as a whole, and of course if there is a lesion in the commissural tracts there will be aphasic symptoms; but it is very difficult, even when the lesions are supposed to reside in the centers, to isolate one from the others.

DR. HUGH T. PATRICK of Chicago was inclined to agree with the views of Dejerine, and those who would locate the various departments of speech in a more diffused manner over the various regions of the cortex.

DR. WILLIAM G. SPILLER of Philadelphia spoke of a case of tactile aphasia. In this form a person does not recognize what he has in his hand. The patient may even be able to describe the object very exactly, but is unable to name it.

The Chairman thought a broad distinction might be drawn between cases of aphasia resulting from defective ingoing impressions and faulty outgoing motor impulses; that aphasias should be characterized as fundamental aphasias and as conceptional aphasias. There are unquestionably certain aphasias produced by impairment of the primary seats of ingoing and outgoing cavities of the brain, while there are other aphasias which are due to trouble of the higher, or the conceptional, or the associated cavities of the brain

DR. CARPENTER also discussed the paper, and mentioned several experiments which he had made upon rabbits with fine platinum electrodes and the very mildest currents, for locating the chewing center. He found marked variations in different rabbits. Just forward from the chewing center was the lip center, and there was a line which produced both lip and chewing movements, and beyond this the lip region was distinctly located.

DR. FULLER suggested that the resulting symptoms would depend very much upon the extent of the lesion. If a blow was struck with a club, for instance, it might go down exactly at the point of the angular gyrus, whereas if it were a little beyond it would push upon the longitudinal commissure, and if it where a little deeper it would cut off the ingoing fibers.

GENERAL SESSION.

THIRD DAY—JUNE 3D.

After the reading of the minutes of the previous session, an announcement of the program of the day was made by **DR. H. A. HARE**, Chairman of the Committee of Arrangements.

A resolution recommending the formation of a National Medical Aid Association was referred to the Publication Committee for consideration. The annual report of the Board of Trustees was then read by **DR. E. E. MONTGOMERY** of Philadelphia. It showed that there is a cash balance in the treasury of the Association of $7160. Receipts from advertisers in the official *Journal* have been greatly reduced during the past year, this being attributable, it is said, to the publication of formulæ in the advertising pages. Anent the discussion which has recently taken place regarding the advisability of moving the publication headquarters from Chicago, the Board recommended that no change be made. A warm tribute of praise was paid to the present editorial staff, through whose unceasing efforts the standard of the *Journal* has been maintained and its circulation greatly increased during the past year. It was recommended that the Board of Trustees be incorporated in order that it might expedite the settlement of certain legal matters now pending.

DR. W. W. KEEN of Philadelphia then delivered the

ADDRESS ON SURGERY. (See page 727.)

During the reading of this address the Presidents of the State Medical Societies and the Presidents of the State Boards of Medical Examiners had assembled in the Green Room of the Academy to meet Dr. N. S. Davis of Chicago, one of the founders of the Association, and upon its completion he was escorted to the stage. Among those accompanying him were Drs. T. J. Smith of New Jersey, Rienzi Robinson of Connecticut, J. W. Gilbert of Mississippi, Charles Phelps of New York, P. S. Murphy of North Carolina, F. C. Larimore of Ohio, George B. Johnston of Virginia, George H. Noble of Georgia, J. H. Duncan of Missouri, J. M. Matthews of Kentucky, W. H. Sanders of Alabama, Hiber Jones of Tennessee, and Wm, C. Riddell of Montana.

Dr. Davis was introduced by Dr. John B. Roberts of Philadelphia, who gracefully expressed the pleasure and honor of the members of the Association at thus having the opportunity of welcoming him, The President, Dr. Senn, followed with a brief address of like tenor.

Dr. Davis' address dealt with the origin and historical aspects of the American Medical Association, its principles and objects, and the results which have been accomplished by the organization. He spoke at some length on the early progress of the Association, in particular from its incorporation to a period covering the first decade of its existence. He then took up the subject of early medical instruction in America, pointing out its lamentable crudeness and contrasting this with the regulations governing and the opportunities offered for the study of medicine at the present day. After tracing the growth of American medical education and deprecating the rivalry existing between medical schools, which leads in some instances to the lowering of a medical degree beneath the level of a common apprenticeship, he closed with an exhortation to the members to advance the work steadily along the lines established by the founders.

At the close of Dr. Davis' address, Dr. Roberts announced that besides Dr. Davis, three other founders of the Association were now living, all octogenarians—Drs. Alfred Stillé of Philadelphia, David W. Atwater of Massachusetts, and J. B. Johnson of St. Louis. Letters of congratulation and regret from Drs. Atwater and Johnson were read, each evincing the warm heart and vigorous mind of the writer.

An address, entitled

WHAT STATE MEDICAL SOCIETIES HAVE DONE FOR THE PEOPLE,

was then read by Dr. George Ben. Johnson of Virginia, and was followed by one on

STATE BOARDS OF MEDICAL EXAMINERS; WHAT THEY HAVE DONE, HOW THEY SHOULD BE MADE UP, AND WHAT THEY SHOULD DO,

which was read by Dr. Wm. Perry Watson of New Jersey.

The following were chosen as officers of the Association for 1898: President, George M. Sternberg of Washington; vice-presidents, first, Joseph M. Matthews of Louisville; second, J. L. Thompson of Indianapolis; third, F. H. Wiggin of New York; fourth, T. J. Happel. Treasurer, H. P. Newman of Chicago; secretary, Wm. B. Atkinson of Philadelphia; chairman, committee of arrangements, J. W. Graham of Denver; librarian, George W. Webster of Illinois. Board of trustees: Jos. Eastman of Indiana, J. F. Priestly of Iowa, Truman W. Miller of Illinois, term expires in 1900. Judicial council: All the former members were re-elected, their terms to expire in 1900. J. H. Musser of Philadelphia was elected to deliver the address on "Medicine;" John B. Murphy of Chicago that on "Surgery," and Samuel C. Busey of Washington, D. C., that on "State Medicine" at the next meeting. Denver, Colorado, was chosen as the next place of meeting.

(To be concluded.)

SOCIAL FEATURES OF THE MEETING.

No general excursion was indulged in by the Association as a body, but many pleasant visits to various points of interest were enjoyed by extemporized parties, the most important of which was a trip to Atlantic City, by invitation of the medical society of that seaside resort. Luncheons were provided in several different places each day, so that the crowd could be somewhat distributed, but even this forethought did not entirely prevent the usual struggle for the means of sustenance. The stated dinners of the various sections were all held simultaneously on Tuesday evening.

The dinner of the Section on General Medicine was held at the Aldine Hotel. The members occupied the large banquet-hall, which was profusely decorated with flowers; the guests numbered over one hundred, and included the leading medical men in attendance at the convention. While no set speeches were on the program, extemporaneous addresses, in response to the call of the toastmaster, Dr. John H. Musser, were made by Surgeon-General George M. Sternberg, U. S. A., Dr. Wyatt Johnston of Montreal, Dr. N. S. Davis, Jr., of Chicago, Dr. D. A. Fiske of San Francisco, and by Drs. H. C. Wood, H. A. Hare, and William Pepper of Philadelphia. Among those in attendance were Drs. Wm. Welch, C. F. Hoover, J. B. Lindsey, S. A. Knopf, J. M. Upshur, H. M. Bracken, H. J. Herrick, J. B. Herrick, Elmer Lee, F. B. Turck, R. C. Cabot, and the following from Philadelphia: S. Solis Cohen, Alfred Stengel, D. M. Hamill, J. D. Steele, J. P. Arnold, D. L. Edsall, Boardman Reed, D. D. Stewart, H. S. Anders, Thos. G. Ashton, Jas. Tyson, A. C. Abbott, M. H. Fussell, A. A. Stevens.

The dinner of the Section on General Surgery was held at the Hotel Bellevue. Among those present were Drs. L. A. Sayre, R. H. Sayre, W. B. Coley, New York; J. McFadden Gaston, Atlanta; E. Souchon, New Orleans; H. A. Kelly, Baltimore; Hunter McGuire, Richmond; H. O. Marcy, Boston; Carl Beck, New York; and from Philadelphia, Drs. Orville Horwitz, E. Laplace, R. G. La Coute, R. Farias, J. B. Roberts, J. K. Young, J. William White, J. Chalmers DaCosta, and W. J. Hearn. Speeches were made by Drs. Nicholas Senn, John Ashhurst, Jr., Hunter McGuire, H. O. Marcy, and G. R. Fowler. Dr. Orville Horwitz, who acted as toastmaster for the occasion, also made some particularly felicitous remarks.

The Section on Obstetrics and Diseases of Women held its banquet in the large banquet-hall of the Hotel Walton, covers being laid for two hundred guests. Dr. Joseph Eastman of Indianapolis was introduced as the toastmaster of the evening by the Chairman of the Committee of Arrangements, Dr. M. B. Ward, and proved to be a most genially disposed presiding officer for the occasion. Toasts were responded to by Drs. Theophilus Parvin of Philadelphia, M. B. Ward of Topeka, Kan., Joseph Price of Philadelphia, L. S. McMurtry of Louisville, Ky., W. E. B. Davis of Birmingham, Ala., E. E. Montgomery of Philadelphia, H. P. Newman of Chicago, L. H. Dunning of Indianapolis, T. H. Manley of New York, and C. A. L. Reed of Cincinnati.

The dinner of the Section on Pediatrics was held in the banquet-room of the Philadelphia Bourse Building, at which a large number of the members interested in the diseases of children were present. Dr. J. P. Crozer Griffith of Philadelphia delivered an address of welcome, and then introduced the toastmaster, Dr. John A. Larrabee, the chairman of the section. Among those present at the dinner were Drs. E. E. Graham, E. Rosenthal, W. A. N. Dorland, J. A. Larrabee, J. P. Crozer Griffith, A. C. Klebs, W. W. Gray, Louis Fischer, H. C. Bloom, C. H. Reckufus, W. H. Wells, W. Reynolds Wilson, Clara Dercum, Bertha Lewis, Kate Baldwin, Anna Fullerton, Frances Van Gasken, Mary Jones, Gertrude Walker, Ada Audenried, J. Madison Taylor, A. E. Gallant, and H. E. Tully.

The dinner of the Section on Dermatology and Syphilography took place at the Hotel Walton, and was well attended by those interested in this branch of medicine. Dr. D. A. Ravogli of Cincinnati presided as toastmaster, and introduced Drs. L. Duncan Bulkley, S. Politzer, J. A. Fordyce, and J. Abbott Cantrell, who, among a number of others, made speeches. The following were among the guests of the evening: Drs. J. F. Schamberg, M. B. Hartzell, J. A. Fordyce, J. Abbott Cantrell, I. M. Koch, R. A. McDonnell, J. W. Lord, William B. Ewing, John V. Shoemaker, L. Duncan Bulkley, A. Ravogli, J. Edward Stubbert, Charles W. Allen, R. R. Campbell, Henry Fleischner, William M. Baum, and T. Casper Gilchrist.

The Section on Ophthalmology banqueted at the Hotel Walton, about eighty members participating in what was declared generally to be the most successful dinner ever given by this body. Dr. George E. de Schweinitz, who acted as the toastmaster of the evening, introduced many of the members, and was himself one of the most happy speakers of the occasion. The principal address was made by Dr. William Thomson, emeritus professor of ophthalmology in the Jefferson Medical College.

The dinner of the Section on Dental and Oral Surgery was held at the Continental Hotel, over sixty guests being present. The toastmaster was Dr. D. H. Guilford, who introduced as speech-makers of the evening Drs. R. R. Andrews, E. T. Darby, E. S. Talbot. J. Truman, W. F. Litch, C. M. Pierce, J. T. Marshall, G. F. Eames, and G. V. Brown.

The Section on State Medicine banqueted at the Aldine Hotel, and the Section on Laryngology, Rhinology, and Otology at the Stenton.

A reception and luncheon was tendered the Section on Laryngology, Otology, and Rhinology by the Board of Directors of the Howard Hospital. After an introduction by the president of the board, Mr. Azariah W. Hoopes, Dr. Laurence Turnbull spoke in an interesting manner of the inception and growth of the institution, and detailed the present work of the hospital in its several branches. The president of the medical board, Dr. William B. Atkinson, then briefly remarked on the historical aspect of the medical profession in Philadelphia, and was followed with short but timely addresses by Dr. T. S. Harper, a founder of the institution, Drs. W. E. Castleberry and E. Fletcher Ingals of Chicago, J. Fulton of St. Paul, G. V. Woolen of Indianapolis, and D. Braden Kyle of Philadelphia.

The various receptions held Wednesday evening were very largely attended and proved most enjoyable. The Provost and Faculty of the Medical Department of the University of Pennsylvania received at the Union League. Dr. John Marshall presented the visitors to Provost Harrison, who, in turn, passed them on to the gentlemen and ladies who assisted him in receiving. The large banquet-hall at times was even uncomfortably crowded.

The Dean and Faculty of Jefferson Medical College held a reception at the Academy of Fine Arts. The reception committee included the Dean, Dr. J. W. Holland, and Drs. John H. Brinton, W. W. Keen, and James C. Wilson. Music by a large orchestra was a feature of the evening. Refreshments were served in the lecture-room, which was beautifully decorated with American beauty roses, pink and white peonies, and ferns.

Many of the visiting delegates and their wives were entertained at the Medico-Chirurgical Hospital by the trustees at a reception which was held in the rotunda of of the hospital. The new clinical amphitheater, which is one of the largest and finest in the United States, was thrown open for inspection, as were the rest of the hospital buildings. In the new building, the private operating-rooms, and the magnificent amphitheater, as well as the surgical equipment, were the subject of most favorable criticism, Refreshments were served during the entire evening in the Board rooms as well as in the rotunda, and the members of the hospital faculty were untiringly watchful of the comfort of their guests.

Governor Hastings and Mrs. Hastings and President Senn and Dr. John B. Hamilton were among those who accepted of the hospitality extended by the hospital, and the following members of the Board of Trustees constituted the Reception Committee: Drs. C. William Bergner, W. Frank Haehlen, John V. Shoemaker, James M. Anders, Ernest Laplace, W. Easterly Ashton, and L. Webster Fox.

Dr. John V. Shoemaker and Mrs. Shoemaker entertained Governor and Mrs. Hastings, and the members of the Association, at a reception at their residence, 1519 Walnut street. A large number were present during the entire evening, among whom were many of the State legislators. A supper followed the reception.

There was a crush of visitors during the whole of the evening at the reception given to members of the Association at the Woman's Medical College—the first college established for the education of women in medicine—and the gathering was notable for the predominating presence of the fair sex. Among the latter were visitors from California, New York, Massachusetts, Connecticut, and Georgia, and other Southern States.

The hospital was prettily decorated with the college colors of red and gray, Spanish moss representing the latter shade among the flowering and foliage plants that ornamented the lower floor and main staircase. The members of the Faculty, constituting the Reception Committee, were the Dean, Dr. Clara Marshall, and Drs. Anna E.

Broomall, Hannah T. Croasdale, William H. Parish, John B. Roberts, Elizabeth R. Bundy, S. Barton, Anna M. Fullerton, and the Sub-dean, Dr. Ruth Webster Lathrop. The Woman's Hospital, adjoining the college, was also thrown open for the inspection of visitors.

On Thursday a number of enjoyable luncheons were given. The Obstetrical Section of the Association was entertained at the Hotel Stenton, and the Pediatric Section at the Children's Hospital, South Twenty-second street. Dr. W. W, Keen entertained the Surgical Section at the Hotel Walton, Dr. J. H. Musser the Medical Section at Houston Hall, one of the University buildings, and Dr. L. Webster Fox the Ophthalmic Section at the Hotel Bellevue. From six to seven o'clock, Provost and Mrs. Harrison received at a garden party on the campus of the University of Pennsylvania. Thursday evening was devoted exclusively to the theater-party given by Messrs. Lea Brothers & Company to the delegates and accompanying ladies. The list of interesting vitascope pictures proved a source of great entertainment and delight.

The excursion to Atlantic City on Friday was participated in by a very large number of delegates and their wives. A special train on the Philadelphia & Reading Railway left Philadelphia at 5.30 o'clock in the afternoon, the return train leaving Atlantic City the following afternoon at the same hour. Dr. Joseph F. Edwards of Atlantic City, Chairman of the Entertainment Committee, had the matter in charge, and to his untiring efforts, which were ably seconded by his colleagues, the great success of the excursion was due.

The ladies visiting the city with the members of the Association were given a round of pleasure and sightseeing by the ladies of Philadelphia. The New Century Club was thrown open to them, and there they assembled at nine o'clock each morning and decided to which of the many points of interest they should go in small parties, each attended by one of the reception committee as a guide. There have been receptions by the Colonial Dames, by the Ladies' Committee of the Jefferson College Hospital, by the Mayor and Mrs. Warwick, etc.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Eleventh Annual Meeting, Held at Washington, D. C., May 4, 5, and 6, 1897.

First Day—May 4th.

The President, Dr. Francis S. Watson, of Boston, in the Chair.

Before taking up the scientific work of the meeting, the President, Dr. Watson, made a brief address, in the course of which he called attention to the large amount of new and valuable material that is annually contributed by the members of the Association to this branch of surgery, a field which, before the Association was formed, was thought to be already quite thoroughly explored and cultivated. He suggested that each year some special subject should be taken up for individual investigation, and the results reported at the next annual meeting.

Dr. Watson read a paper, entitled

A REPORT OF POST-MORTEM EXAMINATIONS IN SOME CASES OF MOVABLE KIDNEY.

It consisted of a report of the *post-mortem* appearances in eight cases of movable kidney. Four of these subjects were males; four females. In four of them both kidneys were movable. The right kidney alone was movable in three cases; the left kidney alone in one case. Hydronephrosis was absent in all of the cases. There was ptosis of one or more of the other abdominal organs in six cases; none in two. The peritoneal coverings of the kidney were greatly relaxed in four cases and moderately relaxed in four. In two of the first four cases, those in which the peritoneum was greatly relaxed, the kidney rotated upon its long or short axis upon turning the body on the side opposite to that of the mobile kidney, or raising the body to an upright position and then bending it far forward.

An interesting point brought to light by these observations was the absence of serious consequences attributable to the movable kidney. In none of them was there evidence of dilatation of the pelvis or the calices of the kidney, or of any organic change that could be referred to the presence of a hydronephrosis during life, and this was as true of those in which the condition was of long standing and the motility very marked, as in the others. This fact he had also observed in five other cases in the living subject on whom he had performed nephrorrhaphy.

The speaker's observations in these thirteen cases confirmed the view recently expressed by Albarran that at least in the earlier stages of movable kidney the enlargement of the organ so often noticed in connection with the crises is due to acute congestion rather than to retention of urine in the renal pelvis, and subsequent dilatation.

Dr. John P. Bryson of St. Louis followed with a paper upon

CLINICAL OBSERVATIONS OF LOOSE AND DISPLACED KIDNEYS.

These observations had been made in the course of operative work in this field, and only represented a synopsis of what the speaker intended to do finally in this connection.

The real pathologic entity in the condition of loose or displaced kidney is a disturbance in the fatty capsule; whether or not this is accompanied by a more or less general enteroptosis was uncertain. There exists, first, a loosening of the capsule, which allows the kidney to move about within it; second, the capsule itself may become loosened from its posterior and superior attachments in such a way as to slip about with the kidney; third, these abnormal conditions may be combined in a greater or lesser degree.

A good deal of the pain and distress which exists in these cases of loose kidney is due to the relative length and looseness of the vascular pedicle. In the cases of displaced kidney the symptoms varied considerably. In some cases there were no symptoms at all referable to the kidney. In one case, which proved to be a displaced right kidney pressing on the duodenum, the symptoms were entirely gastric in character. Vomiting had never been observed in connection with disturbance of the left kidney, whether due to calculus or other cause, while with disturbance of the right kidney vomiting was very common.

Dr. **George E. Brewer** of New York read a paper upon

SOME OBSERVATIONS UPON THE SURGICAL ANATOMY OF THE KIDNEY.

This will appear shortly in the columns of the News.

RESULTS AFTER NEPHRECTOMY FOR RENAL TUBERCULOSIS.

Dr. **L. Bolton Bangs** of New York made a few remarks on this subject. He stated that he had recently made a careful search of the literature, and obtained the experience of his surgical friends, in order to learn, if possible, what the remote results of nephrectomy for renal tuberculosis were, and how they compared with those of hygienic measures. In many cases it was difficult to obtain this information, as the patient had been lost sight of. The literature was searched as far back as 1888, when Newman made his report on this subject. Since then, by the aid of the cystoscope and ureteral catheterization, the diagnosis of renal tuberculosis has become much more exact. He had collected 112 cases, most of which have not been included in any previous report on the subject. The mortality of the operation was about nineteen per cent., adding to this those cases that died within a few months after the operation, we get a mortality of twenty-eight per cent. Thirty-three of the 112 cases (about thirty per cent.) survived for a period varying from one to eight years after the operation. Twenty-eight of the 112 cases were alive nine months after the operation, and in thirty-three cases the result was stated as "promising." As regards the remote results, therefore, a good prognosis was given in about fifty-five per cent. of the cases operated on. In nineteen cases the remote result could not be ascertained.

A study of the above cases shows that the immediate result of nephrectomy for tuberculosis of the kidney may be said to be brilliant, and the prognosis as to the future, especially if the disease is of short duration and confined to one kidney, is very promising.

Dr. **Edward Martin** of Philadelphia read a paper on

DETECTION OF STONE IN THE KIDNEY.

He stated that the following points should be considered in making the diagnosis of kidney calculus: Family history, age and environment, traumatism, diathesis, kidney lesions, whether obstructive or otherwise, the presence of certain elements in the urine (among these an abundance of mucus, blood, crystalline deposits in excess, pus, epithelium, and albumen), alterations in the quantity and specific gravity of the urine, pain. one of the most constant symptoms, although very misleading, tenderness on deep palpation, the presence of a tumor. This he stated is only appreciable after pyonephrosis has developed and multiple calculi of large size had formed. Gastro-intestinal disturbance must be considered, also reflex disturbances of the lower urinary tract. Palpation may be an aid in some instances, although in his own experience he has been unable to make out the kidney in a large per cent. of cases. Ureteral examination affords valuable information. But the X-ray promises to become our most valuable means of diagnosing (*a*) latent cases of calculus; (*b*) those with the regular symptoms; (*c*) to distinguish between renal stone and such conditions as tuberculosis, acute congestion, Bright's disease, nephralgia, and kidney abnormalities giving rise to symptoms identical with stone.

Of the symptoms and signs above enumerated, Dr. Martin said he should place in the order of value:

1. X-ray photographs. Of these several should be taken with the light placed somewhat differently before their negative evidence is accepted.
2. The passage of gravel or small concrements, associated with renal hematuria, fixed pain and colic.
3. Renal hematuria, aggravated by exercise, markedly relieved by rest, remaining long unassociated with pyuria.

After concluding his paper, Dr. Martin exhibited a number of negatives of X-ray photographs, showing the presence of stone in the kidney.

Second Day—May 5th.

URETHRORECTAL FISTULA.

Dr. **James P. Tuttle** of New York read a paper on this subject.

After describing the various operations that have been resorted to in these cases, he gave a brief report of three cases of urethrorectal fistula coming under his care. In the first case the fistula opened into the rectum about half an inch above the external sphincter and was large enough to easily admit the end of the index finger. The floor of the urethra was absent to a considerable extent, and required to be rebuilt. There was considerable though not excessive connective-tissue deposit about the opening, and a stricture of the membranous urethra anterior to the fistulous opening. After several days of preparation and treatment to sterilize the urinary and intestinal secretions, he operated on August 30, 1896, as follows:

The sphincter was thoroughly incised and all the cicatricial tissue cut away with scissors, thus freshening the edges of the fistula at both ends. The intestinal wall was then dissected from its anterior attachments, up to a point three-quarters of an inch above the fistula and half an inch to each side. The stricture of the urethra was then operated on by perineal section, the incision being carried backward into the fistulous opening. A flap was then dissected from the soft tissues on each side of the urethra large enough to replace that portion of the floor which had been destroyed. These were sewed together with catgut sutures over a full-sized sound introduced through the meatus in order that the caliber of the canal might be accurately reestablished and no pocket left. The fistula being thus closed, the sound was withdrawn and the fresh perineal wound and anterior incision in the urethra left unsutured. The edges of the intestine were then sewed together with chromicized catgut and the rectum packed with iodoform gauze, a drainage tube having been introduced for the escape of gas. A soft, No. 12 catheter was introduced into the bladder through the meatus and fastened there. The perineal incision was loosely packed with absorbent gauze and dressed with an ordinary T-bandage. It seemed to cause no inconvenience, and was left in for eighteen days, the bladder and perineal wound being irrigated daily with Thiersch's solution. Convalescence was uneventful, the perineal wound healing in about six weeks. The patient left the hospital December 1, 1896, perfectly well.

PRIAPISM.

DR. R. W. TAYLOR of New York read a paper on this subject. He stated that the affection may be divided into the following classes: (1) Priapism observed in infants and children, induced by reflex action, in cases of long, tight, adherent prepuce, of stone in the bladder or prostatic urethra, and of worms in the rectum. (2) Priapism in adult subjects, symptomatic of stone in the bladder, stone in the prostatic urethra, stricture, cystitis, and observed during retention. In these cases the uneasy or painful sensation is felt in the glans penis, while the body of the organ usually is only moderately congested and sometimes curved downward or laterally. This condition disappears upon the removal of the cause. (3) Priapism symtomatic of gonorrhea, with perhaps involvement of the corpus spongiosum and downward curvature. This condition is painful and transitory, and may occur several times during the night. In cases of downward curvature of the penis due to inflammatory engorgement of the corpus spongiosum and spasm of the musculature of the urethra, the term "chordee" is applied. (4) Priapism due to the ingestion of cantharides, which is a form that is seldom or never seen now, since this drug is so rarely used in medicine. (5) Essential Priapism. This form, which was the only one considered by the author, may be divided into four varieties:

(*a*) Priapism caused by injury to the spinal cord (either high up or low down) and by blows or violence inflicted upon the perineum. (*b*) Priapism which is a symptom of cerebral or descending spinal-cord disease. (*c*) Priapism which occurs after alcoholic and sexual excesses; and (*d*) priapism which occurs in a person in ill health in whom it is difficult to obtain data as to local injury and causation, and in which cases there is now a tendency to look upon leucemia as the etiological factor.

In surveying the results of treatment of the cases of priapism already published, one is forced to the opinion that nothing like a routine method can be laid down. This much, however, can be stated with emphasis: Chloroform narcosis has failed in every case in which it has been used. Ice usually does more harm than good; electricity has no value, and even may be harmful, and leeches to the number of sixteen and forty have failed to produce any amelioration in the condition of the penis, and have been injurious in their depletory effects.

The speaker said that his own preference in dealing with these cases is to resort early to moderate and tentative incisions into the most turgid part, or into parts which are the seat of continuous pain, or into nodular masses, in all probability the result of traumatism. It is always good practice in priapism to use either the potassium salt alone or in combination with mercury, when a history of antecedent or present syphilis is elicited. A number of cases are on record in which the condition was relieved by potassium iodid. Bromid of potassium, chloral, belladonna, and morphin may be of benefit, especially during paroxysms. Hot baths, hot and cold spinal douches, sponging with hot water, spinal cauterization, anodyne poultices, and perhaps icebags may be found beneficial, but the latter must be used guardedly. Any ephemeral or systemic disorder should receive appropriate treatment.

CHRONIC CONTRACTION OF THE PROSTATIC FIBERS ENCIRCLING THE VESICAL NECK.

DR. EUGENE FULLER of New York read a paper with this title. He stated that the condition to which he referred as chronic contraction of the prostatic fibers encircling the vesicle neck represented a pathologic change, and was totally different from what the French writers have termed "neuralgia of the vesical neck" or "contraction of the vesical neck." The chronic contraction to which he referred, however, bears a relationship to the functional one in that it represents a pathologic state which may apparently result from functional contraction or spasm in cases where, owing to some settled disorder of the sexual apparatus, the rectum, the kidneys, or other organs, functional contraction of the vesical neck has existed as a prominent symptom for a long period. The contraction is permanent, rigid, and does not relax even under profound anesthesia. If a perineal incision is made in such a case, and the finger passed into the membranous urethra in an attempt to enter the bladder, the finger tip will find itself tightly engaged in a ring-like contraction in the deepest portion of the prostatic urethra, where under normal circumstances the canal should be wide, funnel-shape, and elastic, merging itself into the vesical cavity in such a manner that it is impossible to determine just where the urethra ends and the bladder begins. The presence of such a contraction, however, cannot be detected by means of a good-sized sound passed through the urethra. If the surgeon feels carefully with the finger-tip he will discover the urethra just in front of the circular contraction to be roomy and somewhat pouched. The mucous membrane of the entire portion of the deep urethra will ordinarily feel perfectly normal, and free from any evidences of previous inflammation. The condition is not associated with prostatic hypertrophy. After the contraction has been throughly ruptured or cut through, little evidence will be left to indicate the nature of the lesion which previously existed.

The clinical symptom prominent in such cases is an inability, either complete or partial, to void urine. This inability is of gradual development, and may at first be intermittent in character, but after a time it becomes permanent. Finally, all power to urinate naturally is lost and permanent recourse to the catheter is necessary.

A diagnosis of this condition has to be made largely from the clinical history of the case, together with an exclusion of other causes which may produce impediments to urination.

The only treatment for chronic contraction of the prostatic fibers encircling the vesical neck which, in the writer's experience, has been efficacious consists in thoroughly rupturing or cutting through these fibers. This treatment, in his hands, has been followed by complete disappearance of all subjective symptoms.

A NEW METHOD OF REMOVING POLYPOID GROWTHS FROM THE BLADDER.

Dr. George Chismore of San Francisco described this method, which was discovered by him accidentally. It consists of the introduction into the bladder of a litholapaxy catheter attached to an aspirator; by means of suction the growths are caught in the eye of the instrument, and by gentle traction and slight to and fro movements they are torn from their attachments, and drop into the reservoir of the wash-bottle. The speaker exhibited a number of vesical polypi removed by this method.

Dr. Charles L. Scudder of Boston reported

A CASE OF NEPHRECTOMY FOR CYSTIC ADENOMA IN A PREGNANT WOMAN.

The case was of interest (1) because bile pigment was found in a cyst of the kidney; (2) because the operation did not interfere with the completion of gestation, and (3) a second pregnancy since the operation was normal in every respect.

Third Day—May 6.

A POSSIBLE AID TO THE DISCOVERY OF THE TUBERCLE BACILLUS IN THE URINE.

Dr. John P. Bryson of St. Louis read a paper on this subject, in which he called attention to the fact that when tubercle bacilli are present in the urine, they are much more abundant in the residual than in the tidal urine. His experiments, which he detailed, showed a remarkable difference between the number of bacilli found in the tidal and in the residual urine.

THE RELATION OF OXALURIA AND URIC-ACID EXCESS TO GENITO-URINARY INFLAMMATIONS AND DISORDERS.

Dr. Bransford Lewis of St. Louis read a paper on this subject. He gave the following as his conclusions:

(1) Both oxalic and uric acid may appear in the urine, either in a physiologic or a pathologic manner. (2) When pathologic, they may exert certain injurious effects on the genito-urinary organs. (3) These effects may be either the inciting of disease where there has been previous health, or they may act by rendering more serious and resistant to ordinary methods of treatment other inflammations and disorders of those organs. (4) The uric-acid element is not always frankly evident as a casual or complicating factor in such cases. (5) And, when recognized, is neither more nor less easily controlled than where its disease-manifestations occur in other organs of the body. (6) When either the oxalic or uric-acid element is acting injuriously in the ways mentioned, systemic treatment (dietary, medicinal, and hygienic) is demanded, and may even take precedence over the local measures which are usually considered sufficient in such inflammations or disorders.

Dr. William K. Otis exhibited an instrument for photographing the interior of the living urinary bladder.

The following officers were elected for the ensuing year: President, J. William White of Philadelphia; vice-president, James Bell of Montreal; secretary and treasurer, Wm. K. Otis of New York.

AMERICAN ORTHOPEDIC ASSOCIATION.

Eleventh Annual Meeting, Held at Washington, D. C., May 4, 5, and 6, 1897.

(Continued from page 686.)

Second Day—May 5th.

Dr. Charles L. Scudder of Boston read a paper on

CONGENITAL DISLOCATION OF THE SHOULDER-JOINT.

He said that but very few cases of this condition have yet been reported, and he therefore felt justified in adding two to the list. The first was that of a girl, fifteen months old, who had been born after a hard labor. During the first week of life it was noticed that the right arm and hand were somewhat swollen. On examination, it was found that the right arm was rotated inward so that the right internal condyle looked backward, and that the head of the humerus was in the infraspinous fossa. The second case was that of a girl of three years, born without the aid of instruments, and after an easy labor. The right elbow in this case was held away from the side, and the forearm and humerus were slightly flexed. The humerus was rotated inward, as in the other case. The length of the right clavicle was 2⅞ inches, and of the left, 3⅛ inches. The humerus on the affected side was shorter, measured from the acromion to the condyle. The radius on the right side was half an inch shorter than on the left. In the first instance it was probable that the traumatism of labor played an important part, but this could not be said of the second case. From the measurements, it seemed highly probable that the distinctive feature between traumatic dislocation occurring at birth and true congenital dislocation of the shoulder was that in the latter there was always present a lack of development of the bones of the upper extremity.

A CASE OF ASYMMETRICAL DEVELOPMENT.

Dr. A. R. Shands of Washington, D. C., presented a boy illustrating this condition. This boy, now twelve years of age, was noticed to be unsymmetrical when he was only two years old. The circumference of the right calf at the middle is 15 and that of the left 9½ inches; the circumference of the right thigh is 18½ and of the left 13 inches. The length of the right and left legs are 28½ and 24½ inches respectively. Strangely enough, the larger thumb is on the small side. He is fairly intelligent, and has an excellent personal history.

SOME EFFECTS UPON THE LEG OF PRONATION OF THE FOOT.

Dr. John Dane of Boston presented a communication with this title. As a result of a careful study of the mechanics of the subject, he had arrived at the following conclusions: (1) In pronation of the foot the greater part of the foot remains stationary, and the leg rotates upon it. (2) In addition to the generally recognized motion of the malleoli inward and slightly downward, the normal outward rotation of the tibia and fibula is replaced by an exaggerated rotation inward. These changes together produce an alteration in the obliquity of the axis of flexion of the ankle-joint sufficient to destroy the mechanism of the ordinary method of supporting weight, and, as a consequence, flexion must be prevented and equilibrium wholly maintained by muscular force, thus quickly leading to fatigue. (4) This inverse rotation of the tibia interferes with the mechanism by which the knee should be locked. In the pronated foot, the knee must be kept in constant extension by muscular force, thus causing fatigue and extreme tenderness over the inner tuberosity of the tibia. (5) To compensate for this inverse rotation of the tibia and fibula, there is an exaggerated inward rotation of the fibula which, in its turn, overstretches the internal rotators of the hip, causing tenderness and pain in the calf and knee. (6) This explanation is wholly in accord with the clinical fact that when, by efficient mechanic apparatus, we have prevented pronation of the foot, we have relieved the pains of the calf, knee, and hip as well.

DR. R. W. LOVETT of Boston read a paper, entitled

FIFTY RESECTIONS IN HIP-JOINT DISEASE.

He formulated the indications for excision as follows: (1) When there is steady and persistent failure of the general health; (2) when the disease in the joint is progressive, as shown by much induration and discharging sinuses; (3) when severe pain and tenderness persist late in the disease; and (4) when there is formation of extensive sequestra in the joint.

DR. W. R. TOWNSEND of New York followed with a paper on

EXCISION OF THE HIP.

He said that from 1888 to 1896, 2295 patients with hip disease had applied for treatment at the New York Hospital for Ruptured and Crippled. Of this large number, 121 excisions had been performed on 119 patients. Abscesses, more or less septic, were present in 113 out of the 119 patients. This emphasized the necessity for opening, cleaning out, and draining all of these abscesses as soon as they became septic—indeed, many of the deaths were apparently the result of sepsis rather than of tuberculosis. In cases of extensive disease and severe sepsis, he believed that better results would follow amputation at the hip-joint, for although this would be undoubtedly followed by greater shock than excision, it would do away at once with all sepsis.

THE PRESIDENT attributed the rapidly growing sentiment in favor of avoiding excision to the influence of the conservative mechanic treatment. He still maintained that excision should only be done as a life-saving measure. In the acetabular cases it was not clear to him why amputation was preferable. The great value of the climatic treatment of these cases, he thought, would bear still further emphasis.

THE PROGNOSIS OF HIP DISEASE UNDER EFFICIENT TREATMENT.

DR. LEROY W. HUBBARD of New York read a paper with this title. He said that the prognosis, as regards life, was good, although the statistics from public institutions would seem to indicate that the mortality was as high as thirty per cent. The best statistics from private practice were those of Dr. C. Fayette Taylor and Dr. L. A. Sayre, and they showed the mortality to be approximately two per cent. The apparatus must be worn for two years in the average case coming under treatment at an early stage, and from three to six years in the neglected cases. According to Dr. Young, the disease was less manageable when developing after puberty, but this was not in accordance with his own experience. The painless form he had found to be the most common, and its course did not seem to be slower or less satisfactory. The shortening should not be over two inches. In making a prognosis, the family history and individual resistance should be given due weight, and it could be stated in a general way that the patient, in a given case, would probably recover with little or no deformity, and with some motion in the joint, and that the apparatus would have to be worn at least two years.

DR. E. G. BRACKETT of Boston read a paper on

GLUTEAL BURSITIS.

He said that in operating for the relief of this condition the incision should be made over the buttock, a little to the inner side of the outer border of the gluteus maximus muscle, and the fibers should be separated until the edge of the gluteus medius was reached. The tumor could then be easily exposed. It appeared as a well-defined, rounded swelling that suggested easy extirpation, but such was not the case. To remove the bursa usually required extensive dissection, and if too radical a removal were attempted there was danger of injuring the capsule of the joint. The wound should be packed, and would heal without leaving a sinus. For a short time after the operation, a high-soled shoe should be worn, and the motion of the limb restricted, but apparatus was not necessary. Bacteriologic examination in two cases had proved the tubercular nature of the bursitis. One of the cases reported developed hip-joint disease on the other side a year after the operation. In all the cases of gluteal bursitis limp was an early and persistent symptom, and occurred without remissions. Pain was not a prominent symptom, and was referred to the back of the leg and under the knee. It did not last long into the night. The chief limitation of motion was in extreme flexion, particularly flexion of the extended leg. Deep fluctuation could be detected in the upper part of the buttock. The ages of the patients varied from two to fourteen years.

THIRD DAY—MAY 6TH.

DR. JOEL E. GOLDTHWAIT of Boston read a paper, entitled

THE TREATMENT OF DEFORMITIES OF THE KNEE RESULTING FROM TUMOR ALBUS, WITH ESPECIAL REFERENCE TO THE CASES IN WHICH THE PATELLA HAS BECOME ADHERENT.

He said that very frequently in cases in which the patella is adherent to the end of the femur there will still be motion of 30° or 40°, but of course there will be loss of voluntary control in extension, as the anterior group of muscles are thrown out. The patella is situated almost always on the outer condyle of the femur, and when the tibia comes forward it strikes against this obstacle. It is possible to straighten the leg by tearing the posterior capsule, but of course this would leave the femur displaced backward. In one of the first cases operated upon by him the deformity had existed for a number of years, and the motion amounted to 35°. Failing to reduce the deformity with the genuclast, he opened the joint and removed the patella. It was then perfectly easy to bring the bones into place. Now, four years after the operation, the patient was able to go about. The convalescence was tedious, and the joint was very sensitive for two years. The motion which had been present before the operation had been lost. In subsequent cases, in order to shorten the period of convalescence, he had gone above the condyles, and done a regular Macewen osteotomy. He had then straightened the leg and corrected the knock-knee. The leg was put up a little extended. These cases had been extremely satisfactory, the convalescence short and the motion preserved. In rheumatoid cases there seemed to be nothing to do but perform excision of the joint.

DR. HENRY LING TAYLOR of New York then reported two cases of

GENERAL LAXITY OF THE LIGAMENTS WITH CONGENITAL HIP LUXATION.

General laxity of the ligaments, he said, might arise from abnormal traction, pressure of malpositions, or displacements, or pressure due to joint effusions.

DR. JOHN RIDLON presented a

SKIAGRAPH OF CONGENITAL DISLOCATION OF THE HIP.

The neck of the femur on the dislocated side *appeared* to be straighter than the normal neck. It was also evident that the leg, as a whole, was rotated outward so that the lesser trochanter was more prominent on that side than on the other.

DR. JOHN RIDLON read a paper, entitled

FOUR CASES OF RECENT FRACTURE OF THE NECK OF THE FEMUR.

He said that in 1892 he had published a paper embodying the results of treatment of twelve cases of fracture of the neck of the femur with the Thomas long hip-splint, and to these he would now add four more cases. He said that, briefly stated, his treatment consisted in reducing the deformity and securing approximation of the fragments, unless there was impaction present, and then the application of the Thomas long splint, with adhesive plasters on both sides. There were buckled to the ring, and "fixed traction" made to an amount represented by the weight of the splint. He was able in these cases to get the patient out of bed at the end of eight weeks, and to remove the splint a short time afterward. The uniform result was solid union and good use of the limb.

DR. R. H. SAYRE of New York reported a case of

COXA-VARA AS A MANIFESTATION OF LATE RICKETS.

The patient was a girl of sixteen in whom there was slight lateral curvature of the spine. The thighs crossed each other at the middle third. There was no muscular spasm and no tenderness, and the limbs were readily straightened by traction.

Following the discussion of the papers the regular business meeting was held and Dr. R. W. Lovett of Boston was elected President, and Dr. John Ridlon of Chicago, Secretary, of the Association for the ensuing year.

REVIEWS.

PREVENTATIVE MEDICINE; a brochure for the laity, being a practical treatise on the theory and the technic of the Prevention of Disease. By DR. CLARENCE RUTHERFORD HENDRICKSON, County Physician of Canadian County, Oklahoma; author of "Practical Lessons in English Grammar." Wichita, Kansas: 1896.

MISTAKES in diagnosis and inability to dispel disease are evidently not the only factors that the author of "Preventative" Medicine and "Practical Lessons in English Grammar"—two strongly contrasting titles—has to contend against. In his dedication he acknowledges the hardships of the early years of his eight of practice, and in his conclusion he lashes himself into a fury concerning patent remedies and quack doctors. The fences of Yukon, Oklahoma, must be as well covered with alluring advertisements and requests to "cure yourself" as the dead walls of New York.

Despite its innumerable errors, this little brochure contains much common sense, and its author is undoubtedly a studious, honest man. But why should the Oklahoma laity be afraid to clean its ears for fear of the *aspergillus*, and why, indeed, should it know so accurately about the gonococcus, the *bacillus typhosus*, the *bacillus mallei*, the *bacterium pneumoniæ crouposæ, et cetera?* We look by no means with favor upon semi-scientific medical brochures for the reading of the lay public and especially do we feel disinclined to see brochures on "preventative" medicine; so if we say that this one contains some common sense, it must be taken as very high praise.

TRAITE DE THERAPEUTIQUE ET DE MATIERE MEDICALE. Par VICTOR AUD' HOUI, Médecin de l' Hôtel Dieu de Paris. Paris: G. Steinheil, 1897.

THIS work of 1200 pages has been written for the needs of the student as well as for reference by the practicing physician. It is based upon a strict classification of drugs and upon the scientific determination—by experiment, mostly, of the action of medicinal agents. It contains an account of the older as well as of the more modern drugs, and describes in detail recently inaugurated therapeutic measures. Nosalogy, prophylaxis and pharmacology are considered in its pages, and following the preface, is a review of the bibliography of French works on therapeutics. The work is an exhaustive effort to place the modern view of therapeutics in all its phases on record, and is an excellent reference-book for everyone who is interested in the subject.

THE MEDICAL NEWS.

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ORIGINAL ARTICLES.

VENEREAL DISEASE IN THE NAVY AND ITS PREVENTION.

BY R. PERCY CRANDALL, M.D.,
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PASSED ASSISTANT SURGEON, U S. NAVY.

THE loss to the United States Government from venereal diseases in the naval survice for the year 1895, as shown in the report of the Surgeon-General of the Navy for that year, was equivalent to the total loss of the crew of such a vessel as the Castine or Machias for a period of six months. Incredible as this may seem, it is nevertheless true, and may be readily demonstrated in the above-mentioned report.

Owing to the admirable method of gathering statistics now followed by the Bureau of Medicine and Surgery, accurate results and data are readily obtainable. Previous to the report for 1895, it was impossible to estimate the exact number of cases of any one disease, as a case might appear first on the returns of a ship or station, and afterward on the returns of one or more hospitals, thus appearing as two or three distinct cases. Now, however, a case appears but once as an admission, and if sent to a hospital as a readmission, making the total admissions for the year represent the actual number of cases.

The "Report of the Surgeon-General of the Navy" for 1895 shows the total admissions for disease and injury to have been 10,625; of these 721 were venereal. Allowing thirty days for each case of venereal disease (which is very small), we have 22,351 sick days, or the loss of 61 men for one year, or 122 men for six months, about the strength of the Castine's crew.

It is impossible to ascertain the actual amount of venereal disease in the navy owing to the tendency to concealment; and again many cases are not entered on the returns when they are not incapacitated from duty. At several of the home stations the percentage of venereal diseases is very large. During the first four months of the present year, from January 1st to April 30th, there were under treatment at the United States Naval Hospital, Norfolk, Va., 150 cases of disease and injury, 50 cases, or 1 in 3 being venereal. In addition, some 12 or 15 cases developed while patients were under treatment for other affections, which do not show on the returns. Many of the cases were acquired at one brothel in the city of Norfolk from one woman, and yet, I found upon inquiry, that the police were powerless to interfere, and the woman still continues to infect the admirers who seek her favors. What better argument is needed than this in favor of police supervision and medical inspection of prostitutes.

We can never hope to stamp out prostitution, as long as the demand exists the supply will always be adequate, and prostitution is the chief source of all venereal diseases. Sanger says ("History of Prostitution") "it is a mere absurdity to assert that prostitution can ever be eradicated. Strenuous and well-directed efforts for this purpose have been made at different times. The whole power of the church where it possessed not merely a spiritual, but a secular arm, has been in vain directed against it. Nature defied the mandates of the clergy, and the threatened punishments of an after life were futile to deter men from seeking, and women from granting sinful pleasures in this world. Monarchs victorious in the field and unsurpassed in the council chamber have bent all their energies of will, and brought all the aids of power to crush it out, but before these vice has not quailed. The guilty women have been banished, scourged, branded, executed, held up to public opinion as immoral; their partners have been subjected to the same punishment; denuded of their civil rights; have seen their offenses visited upon their families; have been led to the stake, the gibbet, and the block, and still prostitution exists. The teachings of morality and virtue have been powerless here. In some cases they restrain individuals; upon the aggregate they are inoperative. The researches of science have been unheeded. They have traced the physical results of vice, and have foreshadowed its course. They have demonstrated that the suffering parents of this generation will bequeath to their posterity a heritage of ruined powers; that the malady which illicit pleasure communicates is destructive to the hopes of man; that the human frame is perceptibly and regularly depreciating by the operation of this poison, and have shown that even the desire for health and long life, one of the most powerful motives that ever influences a human being, has been of no avail to stem the torrent."

But while history has shown that prostitution cannot be crushed out, it has also shown that, by a proper system of regulation and supervision, its evils may be materially lessened, and the spread of venereal disease be reduced to a minimum.

Before considering further the regulation of prostitution as a means of prevention, I wish, first, to take up a few points that are particularly applicable to prevention in the naval service.

First, then, regarding enlistments.

Physical examinations for entry into the service should be more strict. Men frequently are passed who have had the initial lesion of syphilis, but at time of examination have not yet developed secondary symptoms, and frequently present no signs whatever by which the disease may be detected. If all men, after examination, were kept under observation for six or eight weeks before final enlistment, much loss of service would be saved the Government.

An elongated foreskin should be a positive bar to enlistment, unless circumcision is at once performed by the examining surgeon, thus decreasing the danger of acquiring venereal lesions. I have met with many cases, both in service and private practice, where men with elongated foreskins have contracted disease, and others, again, with retracted foreskins have cohabited with the same women, and passed unscathed. Treatment is rendered much more difficult, and the tendency to phimosis and phagedena is much increased where the foreskin constantly covers the glans.

Another important point which seems to have received but little attention is the periodical inspection of a ship's crew. This should be done at least once a fortnight, and, in addition, liberty parties should be thoroughly examined both before going on liberty and after returning. It is a firmly fixed belief among sailors that to get rid of a chronic discharge it must be given to some one else, and this they invariably do whenever the opportunity offers.

Dr. Kidder[1] relates that venereal disease became so prevalent in the Asiatic Squadron that a general order was issued in 1869 requiring the surgeon of each vessel to examine all liberty men, both on leaving and after returning to the ship. Unfortunately, the order exempted from examination all over thirty-five years of age, married men, and petty officers, and as the majority of the cases occurred among these classes, as shown by an examination of the medical journals, the order proved ineffectual. The Russian Government took a more effectual means about the same time. They obtained semiofficial possession of a deserted village called Hinassa, across the harbor from Nagasaki. "When any Russian ships arrived at the port they were accustomed to allow a certain number of women to migrate to this village where they were placed under the charge of a surgeon. The crew were then turned loose ashore only at this village, one watch at a time, during the stay of the ship. This characteristically direct proceeding proved eminently effectual, the amount of venereal disease on Russian ships being very small." (Kidder.)

In addition to the periodical inspection, the men should be instructed in sexual hygiene and the importance of ablution. When syphilized they should use individual mess gear, towels, etc., and be fully informed of the contagious nature of their disease.

Returning again to the most important preventive factor of all, the regulation of prostitution, it seems almost incredible that while thousands and thousands of dollars are spent annually to quarantine against yellow fever, cholera, smallpox, and other contagious diseases which occasionally occur, not a dollar is expended to control or prevent syphilis, which we have always with us. Nearly every civilized nation but our own has some form of regulation and supervision, by which the spread of venereal diseases is in a great measure checked and controlled.

Lecky says in his "History of European Morals": "In the eyes of most Continental writers, who have adverted to this subject, no other feature of English life appears so infamous as the fact that an epidemic which is one of the most dreadful now existing among mankind, which communicates itself from the guilty husband to the innocent wife, and even transmits its taint to the offspring, and which the experience of other nations conclusively proves may be vastly diminished, should be suffered to rage unchecked, because the legislature refuses to take official cognizance of its existence, or proper sanitary measures for its repression."

In the United States the experiment of regulation has been twice tried with the happiest results, but owing to misplaced sentiment and religious fanaticism, it was abandoned in both instances after a short trial. The first experiment was made at Nashville, and is described in the report of the Committee on the Prevention of Venereal Diseases presented at the eighth annual meeting of the American Public Health Association, of which Medical Director Gihon of the navy was chairman. Dr. Gihon says: "Colonel Fletcher of the Surgeon-General's Office of the U. S. Army, writes to your committee: 'In 1863, while I was on duty in Nashville, the question of the periodical examination of prostitutes, as a protection to the troops stationed at or passing through the city, was referred to another medical officer and myself. We drew up regulations for the purpose, and for nearly three years the women were examined, at first every two weeks, but subsequently every ten days.'

"I believe this was the first occasion of any systematic inspection of prostitutes attempted in the United States. Its results may be briefly stated thus:

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[1] "Venereal Diseases in Japan."

"1. The amount of venereal disease was markedly lessened, so much so, that its occurrence came to be looked upon (absurdly, of course) as an imputation on the care of the examining surgeon. I have more than once known a company officer to complain that a man was off duty for disease caught of such a girl at such a time, and demanded that she be sent to the hospital.

"2. The women, who were at first rebellious, became quite reconciled to the system. I have known them to come to the hospital voluntarily, desiring to be examined for suspected disease.

"3. It was self-supporting, the fee paying the expenses of the hospital."

It may be mentioned here that the committee embodied their conclusions in the following resolutions:

"Resolved, that the American Public Health Association earnestly recommends the Municipal and State Boards of Health to urge upon the legislative bodies of this country the enactment of a law constituting it a criminal offense to knowingly communicate by any direct or indirect means a contagious disease, such as smallpox, scarlet fever, or venereal disease, and giving to said State Boards of Health, and the State and municipal officials under their control, the same power in the prevention, detection, suppression, and gratuitous treatment of venereal affections which they now possess in the case of smallpox and other contagious diseases."

The next attempt at legislation was made in St. Louis in 1872. The Missouri legislature enacted a law based on the system followed in Paris. Prostitutes were registered and subjected to medical examination at regular intervals, and when diseased sent to a hospital and retained until cured. Many of the evils of prostitution were abated, disease diminished, and the number of brothels and prostitutes decreased. Yet, in spite of all these beneficial results, a year had scarcely passed ere the clamor of the clergy and of the devotees of the innumerable religious organizations made itself heard and demanded the repeal of the law, which was eventually brought about and in a most dramatic way, as described by Sanger,[1] as follows: "A petition praying for the repeal of the obnoxious law, signed by more than 100,000 good people, was presented. The document was cumbersome. A wheelbarrow, decorated with white ribbons and accompanied by a group of innocent young girls, attired in spotless, white gowns, was brought into service, and on it the gigantic and emphatic protest against licensing of vice was wheeled up to the clerk's desk to be read. Courageous, indeed, would have been the country member who would have voted otherwise than he did." Counter petitions from the cities and the medical profession were in vain, the doctors of medicine were ignored, and the doctors of divinity won. And all this because the public at large and the clergy persist in regarding the regulation of prostitution as a moral problem, whereas it is a problem of sanitary science.

The great cry of the many associations for the prevention of licensed prostitution is that vice is made more attractive, that many timid ones who are now held back from gratifying their desires through fear of contracting disease would rush headlong to embrace the golden opportunity offered by the regulation system. How puerile this argument is, it is unnecessary to state. We know only too well, both as men and physicians, that the sexual instinct is so strongly implanted in man that he will risk Heaven itself for its gratification. This is especially true of our sailors, the majority of whom not only do not care about the risks they run, but in some instances are rather proud of their battle-scarred organs, and are ever ready to enter the lists for another tilt with Venus. The following will serve to illustrate this point: During my last cruise, an old boatswain's mate who had grown gray in the service presented himself at sick-call one morning with the announcement that he had *it* again; and he had—making, according to his own statement (which I had no reason to doubt), his eighteenth case of acute gonorrhea. In addition, I found that he had had nearly every other form of venereal disease, including syphilis. The undoubted pride which he took in his record, as he termed it, was a matter of much astonishment to me, although recent experience has shown me many such cases, even in private practice, where the risk of contracting disease was no check whatever to the gratification of the sexual appetite.

The enlisted men seek, as a rule, the lowest resorts, where disease always abounds more or less, not being admitted into the better class of houses, owing to their tendency to make trouble and leave behind some venereal memento. It is, then, doubly important that these houses of the lower class should be under police supervision and subject to medical inspection.

In February, 1876, a committee appointed by the New York Legislature to investigate the cause of the increase of crime made a report, from which I quote the following: "In the interest of the well-being, the decorum, the decency of society; in the interest of the peace and happiness of by far the greater number of people; in the interest of the preservation of the purity of the guardians of the public peace; in the interest of public health, and for the sake of thousands yet unborn, the committee earnestly urge upon the Legislature, as the only means of grappling with the social evil, the granting to the police the power of regulation, of localization, and medical visitation."

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[1] "History of Prostitution."

It is needless to say that the carrying out of the resolution was violently opposed by that class of narrow-minded people who insist upon remaining blind to the presence of syphilis and the evils of unrestrained vice. "The gross ignorance of that class which busies itself about a speculative future, rather than an actual present, is an important cause of the non-recognition of the presence of syphilis. For this class, the idea of syphilis is inseparably connected with that of sexual commerce with an infected individual, and is considered as clear proof of chronic debauchery. Of a non-venereal origin, persons of this class have no suspicion. The initial lesion occurring elsewhere than upon the genitals is attributed to some other cause, and the disease is allowed to run its terrible course."[1]

"Suppress prostitution, and capricious lusts will overthrow society," said Saint Augustine[2] in the early Christian era, and the world's history has fully justified this opinion.

The state of New York City to-day is lamentable. The streets are overrun with prostitutes owing to the recent breaking up of the regular houses, and the smaller flats in the upper part of the city are thronged with them. This is especially dangerous, as they come in contact with the innocent and virtuous, the working girls, and the lower middle classes. Thus young girls are apt to be led aside from the paths of virtue by the glint and glitter of a fast life and this apparently easy and delightful mode of gaining a living. This condition of affairs is not found in Paris or Berlin where prostitution is under police supervision. One is not jostled at every turn in Paris by eager-eyed harlots as in London and New York. No better time than the present could be chosen to try the regulation system in New York City. The police force since its reconstruction would carry out strictly and honestly the provisions of such a system, prostitutes would cease to throng the thoroughfares, servants would no longer carry disease and sin into private families and young girls would be less liable to be corrupted.

Wherever suppression has been tried it has failed utterly. In Berlin in 1845 a royal edict was promulgated, under pressure, closing the brothels and discontinuing the registration of prostitutes. The result was disastrous, prostitutes filled the streets, theaters and dance-halls. Under the toleration system this had never happened, the girls being forbidden to appear in public places of amusement. Venereal disease multiplied so fast that the ordinary wards at the Charité were soon filled to overflowing and new wards had to be added to accommodate them, and finally syphilitics had to be sent to the Lazarette. Prostitution, which under police supervision had been confined to one quarter of the city now spread over the whole town and to the surrounding villages and even invaded private families through servants. Things reached such a frightful state eventually, that in 1851 the edict was repealed and police supervision restored and still exists. After a six-years' trial of the "crushing-out" system, it was admitted by the ministry to have been a complete failure. Nearly every civilized and semi-civilized nation has some form of supervision and regulation. In Belgium the system is very complete. In 1855 in an army of 30,000 men there were but 200 cases of syphilis. The Royal Academy of Belgium adopted the following resolutions in 1887:

1. The Belgium Royal Academy considers that the regulation of prostitution is necessary to restrain the development of venereal diseases and of syphilis.

2. Prostitution that advertises itself in the streets and public places, being the most potent cause in the propagation of venereal diseases and syphilis, should be interdicted.

3. Persons convicted of living by habitual prostitution should be inscribed and subjected to sanitary visits.

4. Registration and medical visits should only be authorized under safeguards that would, under each and every circumstance, protect the honor and dignity of the person.

5. From the exclusive standpoint of public health, the Academy declares that frequent and conveniently administered sanitary visits constitute the most efficacious means of arresting the propagation of venereal diseases and syphilis.

The Contagious Diseases Acts of 1864, 1866, and 1869 in England were productive of the most beneficial results in the army and navy. Before the acts went into effect, there were 108 cases of syphilis to the 1000 in the army. After the acts had been in force, the proportion of syphilis fell to 54 cases in the 1000 in 1874.

Much has been written both for and against these acts, but statistics show that syphilis decreased, brothels and prostitutes lessened in numbers, many of the evils of prostitution disappeared, and many young girls, warned by the police that they were under observation, gave up the life rather than be inscribed on the police register. Many reformed, owing to the facility with which they could be approached while in hospital by philanthropists and the clergy; others, again, married, settled down, and became respectable members of society.

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[1] Fournier, *Gazette des Hôpitaux*, 1878.

[2] Tr. Ord. lib. ii, c. 12.

The *Lancet* of January 30th describes the startling condition of affairs of the army in India since the passage of the "Cantonments Act" abandoning the medical inspection of prostitutes visited by the soldiers. The increase in venereal diseases among the troops has been very great, 24,000 out of 73,000 suffering from special disease. One-half of the entire army are unfit for prolonged marching service. Medical inspection had proved invaluable in India, but the narrow-minded meddlers who are trying to lay up additional treasures in Heaven thought otherwise, and, under pressure, the "Cantonments Act" was passed. In spite of the fact that the Viceroy's council has urgently recommended the repeal of this mischievous act, it is still violently opposed in England.

At most of the foreign ports visited by our ships of war, regulation and supervision exist in some form. It is true that in some places the system is not strict enough, as in Spezzia, as shown in Surgeon Green's report of the recent cruise of the "Marblehead" in Mediterranean waters. While the ship was in Spezzia, during a stay of sixteen days, fifty per cent. of the crew contracted venereal disease. Dr. Green remarks, "that being a large garrison town, and the principal rendezvous of the Italian navy, one would think that a rigid inspection of prostitutes would be held; but, judging from the results as affecting our crew, hygienic laws in that direction must be very lax."

It is unnecessary to further multiply instances where the suppression of prostitution has failed and the regulation and supervision succeeded. The majority of medical men the world over are in favor of it, and even clergymen of the advanced type have recognized its advantages. The very able papers of Medical Director Gihon and J. William White should be consulted in this connection.

In conclusion, then, venereal diseases in the naval service would be reduced by:

1. Circumcision before or immediately after enlistment.
2. Applicants for the service being placed on probation after physical examination before final enlistment.
3. A periodical examination of the ship's crew, at least once a fortnight.
4. The examination of all liberty parties both before and after returning from liberty.
5. The use of individual mess gear, washing utensils, etc., by syphilitics on board ships and in hospitals.
6. The regulation of prostitution by a system of registration, police supervision, and medical inspection.

THE INCREASING FREQUENCY OF DIABETES MELLITUS.

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THE medical profession, in the face of conflicting theories as to the etiology and pathology of diabetes mellitus, and recognizing the futility of treatment in many cases of the disease, has nevertheless reached certain conclusions in regard to it which seem to become more certain as additional evidence is adduced. The first of these is that the gravity of the affection is in direct proportion to the youth of the patient; the second, that after fifty years of age, and particularly in stout persons, its gravity is greatly modified, and the third, that it is a disease affecting the male sex far more frequently than the female. Usually this proportion is from three to two to six to two, but Cantani, in 1004 cases, found 83.37 per cent. males and 16.63 per cent. females. This proportion is nullified in childhood when females are equally or more commonly affected than males. Finally, diabetes mellitus is a disease which is extraordinarily on the increase nearly all over the world, although there are exceptional localities to which this statement does not apply.

The relative death-rate from diabetes is well known owing to the careful reports now provided so universally by boards of health and census returns, and it is chiefly from this source that we learn of the increase in mortality and probable morbility just named.

As an illustration of this fact I may call attention to three series of statistics which particularly emphasize this increase. Thus "Purdy on Diabetes" points out that the United States census of 1880 gave a death-rate of 72 per 100,000 for 1860; 98 per 100,000 for 1870, and 170 per 100,000 for 1880. The results of the census of 1890 are 191 per 100,000. In other words, from 1850 to 1880 (thirty years) the increase of mortality from diabetes was 150 per cent. A certain proportion of this increase must, however, be placed to the credit of improved diagnostic methods, coupled with the fact that in the earlier reports a greater number of patients with diabetes were reported as dying from carbuncles, galloping consumption, and other diseases which destroy this class of patients. It is worth noticing that the greatest increase in the frequency of diabetes was in the ten years from 1860 to 1870, or during the war decade, during which time the entire nation was under great nervous strain and, according to Purdy, became more free livers so far as wines are concerned. It is interesting to note that the number of diabetics in this decade in England was not proportionately great. The increase, however, is by no means limited to the United States. This fact is shown by the statements of Saundby[1] who points out that from 1884 to 1893 17,794 persons were registered as dying from diabetes in England and Wales, whereas, according to Roberts, in the decade of 1851–1860 the death-rate was only 4546. Again, Saundby shows that even allowing for the increase of population the increase in mortality is over 70 per cent. or 90 per cent. if this is not allowed.

Finally, so far as the statistics of others are concerned, I may cite those of Fowler[2] in which he shows the mortality from diabetes in New York to have risen from 42 in 1878 to 105 in 1887 estimating the population as averaging 1,400,000. These statistics, as compared with the population, are not as accurate as if the proportion to actual population in each year had been given. In Philadelphia from 1870 to 1880 (eleven years) the deaths were 206.

So much then for the general statistics, which might be greatly increased in number. I will pass on to a consideration of the relative frequency of the disease among the living, in connection with which I hope to be able to adduce some few statistics myself. In this line very little is to be found in medical literature, in which almost all statistics deal with the relative death-rate.

Senator[3] states that Romberg, out of 10,000 patients in the Berlin Polyclinic, found only three diabetics, and again from 1872 to 1874 there were in 16,550 patients six diabetics. In Griefswald, out of 4640 patients there were three diabetics according to Ziemssen and Marmé. In Wurzburg, out of 4460 patients there were seven diabetics. At Jena, however, according to Ruicholdt, there were 13 cases in 5153 patients, and this was nearly twenty-five years ago.

In this connection the statistics I have been able to gain from the reports of a number of English hospitals and from the Jefferson Medical College Hospital are of interest particularly when they are compared with the statement made by Osler in regard to the Johns Hopkins Hospital in Baltimore where out of 35,000 cases only 10 cases of diabetes occurred. As a large number of these patients were probably negroes, and the disease is rare in this race, the great difference between his statistics and my own may be explained.

In the Jefferson Medical College Hospital, which treats a moderately well-to-do class for hospital patients, the following facts are obtainable: From September 1, 1890, to October 1, 1891 (thirteen months) there were 5 cases in 2485 in the out-patient department, and from October 1, 1891, to May 16, 1892 (seven months) there were 7 cases in 3036. In 1893 there were in the wards 193 cases, of which 2 were diabetics, and in the dispensary service 3727 cases, of which 8 were diabetics, or 10 cases in 3920 patients. In 1894 there were none in the wards, but in 3484 cases in the dispensary there were 8 cases. In 1895 there were 4 cases in the wards out of 263 cases, one in the private wards out of 237 cases, and 3 cases in the out-patient department out of 3392, or 8 cases in 3892 patients. In 1896 there were 2 cases in 323 in the medical wards and 10 cases out of 3184 in the out-patient medical department. We find, therefore, that out of 24,051 cases there were 50 cases of diabetes mellitus.

I have also collected the following statistics from three English hospitals:

Hospital.	Year.	Patients.	Diabetics.	Males.	Females.
St. Bartholomew's..	1860......	5724	9	0	0
	1861......	5585	8	0	0
	1862......	5389	6	0	0
	1863......	5462	8	0	0
	1864......	5543	6	0	0
	1865......	3519	7	0	0
	1866......	3065	11	0	0
	1867......	1938	10	0	0
	1868......	No record.			
	1869......	2343	6	4	2
		38,568	71	4	2

Up to 1867 the records do not separate medical and surgical cases. The column under "Patients" thus includes both classes. Hereafter it includes only medical cases. The year 1869 is the first in which males and females are separated.

Hospital.	Year.	Patients.	Diabetics.	Males.	Females.
St. Bartholomew's..	1870......	2317	9	6	3
	1871......	2366	11	8	3
	1872......	2204	15	10	5
	1873......	2382	19	13	6
	1874......	2496	14	5	9
	1875......	2354	8	5	3
	1876......	2596	16	11	5
	1877......	2290	20	13	7
	1878......	2418	12	11	1
	1879......	2560	15	9	6
		23,983	139	91	48
	1880......	2640	16	9	7
	1881......	2647	21	18	3
	1882......	2949	16	9	7
	1883......	2806	14	10	4
	1884......	3109	20	12	8
	1885......	2713	21	14	7
	1886......	2416	26	17	9
	1887......	2543	20	13	7
	1888......	2579	21	13	8
	1889......	2296	22	12	10
		26,698	197	127	70

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[1] 'Lectures on Renal and Urinary Diseases."
[2] Keating's "Cyclopedia," vol. ii.
[3] "Ziemssen's Encyclopedia," vol. xvi, p. 863.

Hospital.	Year.	Patients.	Diabetics.	Males.	Females.
St. Bartholomews	1890	2655	18	15	3
	1891	2271	15	12	3
	1892	2296	32	22	10
	1893	2697	23	16	7
	1894	2523	23	17	6

It is interesting to note that there has been a marked increase in diabetes in this hospital from 9 in 5724 in 1860 to 17 in 2523 in 1894—or from 71 in 38,568 cases in the decade of 1860 to 1869 to 197 in 26,698 cases in 1880–1889.

Hospital.	Year.	Patients.	Diabetics.	Males.	Females.
Guy's Hospital	No record of any kind up to 1868.				
	1869	2079	20	0	0
	1870	1968	25	0	0
	1871	2196	9	0	0
	1872	2307	27	0	0

Since 1873 there is no itemized list of diseases. From 1883 on, even the number of patients in the house is not given.

Hospital.	Year.	Patients.	Diabetics.	Males.	Females.
St. Thomas	1861	2121	6329 30 1861–65 reported *en masse*.		
	1862	1348			
	1863	979			
	1864	953			
	1865	928			
	1866	851	5	0	0
	1867	732	5	0	0
	1868	812	1	0	0
	1869	770	4	0	0
	1870	769	2	0	0
		10,263	47		
	1871	787	7	0	0
	1872	1584	8	7	1
	1873	1262	2	2	0
	1874	1183	6	4	2
	1875	1530	7	4	3
	1876	1409	4	2	2
	1877	1363	11	8	3
	1878	1305	5	3	2
	1879	1427	7	6	1
	1880	1678	4	1	3
		13,528	61	37	17
	1881	1845	7	6	1
	1882	1871	8	6	2
	1883	2040	7	7	0
	1884	2064	8	7	1
	1885	2022	8	6	2
	1886	2195	11	7	4
	1887	2156	14	12	2
	1888	1941	9	4	5
	1889	1970	16	8	8
	1890	2023	10	7	3
		19,327	81	71	28
	1891	1990	11	7	4
	1892	2065	15	11	4
	1893	2037	7	4	3
	1894	1910	10	7	3

This hospital shows a much smaller increase in diabetes than St. Bartholomew's. In the decade of 1861–1870 the proportion was 47 cases, while from 1881 to 1890 it was 81 in 19,327. All the studies refer to ward cases not to out-patient departments. It seems evident, therefore, that diabetes mellitus is far more prevalent in England and America than it was some years since, and that it is far more common than some of the text-books would lead us to believe. The proportion at this time in hospital practice is about 1 in 540 cases, and could private statistics be obtained it would probably be far higher in the upper classes. In England it is apparently far higher than here.

INFECTION BY THE URETHRAL SOUND.

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THERE are excellent practical reasons for the consideration of infection by means of the urethral sound independently of catheter infection. So much has recently been added to our knowledge of the latter mode of infection that there are at the present time certain well-established principles governing the use of the catheter, and the results of infection are fairly well understood. Contrasting the use of the two instruments, the differences are: (1) the conditions under which they are introduced; (2) the size of the instruments used; (3) the diseases for which instruments are systematically employed.

The catheter is an instrument designed essentially for the diagnosis and treatment of diseases of the bladder. It is not, so to speak, from a surgical standpoint at least, a urethral instrument. The sound, on the other hand, while occasionally used for vesical exploration, is inferior to certain other instruments for that purpose, and its field of usefulness is chiefly in the diagnosis and treatment of urethral disease. The catheters employed in diseases of the bladder, for the purpose of evacuating the urine and irrigating the viscus are not usually large, and their introduction may be attended by little or no traumatism of the urethra and structures about the neck of the bladder. Such traumatisms as may be inflicted are due, as a rule, not to the large size of the instrument, but to the pathologic conditions encountered on the way to the bladder. In the case of the urethral sound, the instrument being used principally for the purpose of dilatation, it is obvious that it may be necessary to resort to quite large-sized instruments on account of the conditions present. It is a self-evident proposition that the composition of the instrument very largely governs the degree of traumatism inflicted during its introduction. As the soft catheter is so frequently used nowadays, the danger of traumatism has been greatly minimized. Sounds, however, and, within certain limits, bougies, are composed of relatively dense materials, and it is possible with very slight force to inflict considerable injury upon the urethra and vesical neck.

The catheter is usually used for the purpose of evacuating the bladder, either for remedial purposes, or with the object of procuring fluids for examination, and oftentimes for the purpose of irrigating the viscus. In many cases the instrument is introduced only once, or at rare intervals; whereas, the conditions indicating the passage of sounds are likely to demand dilatation at more or less frequent intervals over a long period of time. The class of cases which demands the systematic introduction of the catheter and withdrawal of the urine, as is true of certain cases of atony of the bladder and enlarged prostate, must, of course, be taken into consideration. In these cases, however, there is often very little to be guarded against save personal or catheter uncleanliness.

I believe it is the experience of every surgeon to have occur in his practice cases of infection due to the introduction of sounds in the treatment of urethral disease, and especially in stricture. Increased opportunities for observation have convinced me that trauma is a very much more important factor than most surgeons are aware. It is therefore best for the surgeon to understand plainly that his instrument is passing through and over an infected area every time he passes a sound. It is quite generally understood that there is great danger of the transference by the sound from the anterior to the posterior urethra and bladder of infectious materials during the passage of the instrument. This occurs in the larger proportion of instances in which the sound is introduced in the ordinary manner. Infection, however, does not occur in by far the larger proportion of cases even when sounds of improper form are introduced. This relative immunity of the deeper structures and bladder to infection is due to the fact that little or no harm is done to the mucous membrane. Should damage be produced at any point in the urethra, vesical neck, or bladder proper, an atrium for infection is at once afforded and pathologic phenomena, consequent upon such infection, are very likely to arise. In looking at the ordinary sounds sold in the instrument shops, I am really surprised that so few cases, comparatively, of infection by means of the sound occur. The ordinary urethral sound is some inches longer than is absolutely necessary, and when introduced in the manner advised in various text-books, must necessarily invade parts far beyond the site of the disease for which they are used. Let the surgeon take, for example, one of the monstrous sounds sold in all of our instrument shops and introduce it into the urethra in a case of stricture at the bulbo-membranous junction; let the sound be swept downward toward the feet, as recommended in the diagrams in the text-books — which diagrams I regret to say I have presented in my own work on stricture—and the point of the sound will be found to be three or four inches beyond the point which it is desired to dilate. It will project several inches into the bladder, which is entirely unnecessary, and will in all probability impinge on the anterior vesical wall. It will surely do so if the bladder is empty, or only moderately distended. This projection of the instrument far beyond the site of the disease which is under treatment is an element of danger that must be obvious to every practical surgeon who will give the matter any consideration. This danger may be obviated by using sounds with a very short shaft. The ordinary urethral sound is supplied with a conical point. There is often great temptation to wedge such an instrument through the point of obstruction in the urethra, thus producing a traumatism, which might be avoided. There is a temptation with this form of faulty sound to the introduction of sounds several sizes larger than should be introduced. I have obviated this fault in the construction of sounds by devising a set, the points of which conform as nearly as possible to the shape of the distal extremity of the metallic exploring bulb. Such sounds are abruptly stopped by obstructions through which one would sorely be tempted to wedge a sound with the ordinary conical point.

There are numerous conditions that may arise as a consequence of sound infection. The most important of these are: (1) periurethral folliculitis and phlegmon; (2) plastic inflammation of the corpus spongiosum, with resultant cordee; (3) exacerbation of a pre-existing urethritis; (4) Cowperitis; (5) posterior urethral inflammation, which almost inevitably extends to the glandular tissues of the prostate; (6) true inflammation of the vesical neck; (7) acute or chronic follicular prostatitis; (8) prostatic and periprostatic abscess; (9) seminal vesiculitis; (10) true cystitis; (11) urethral chill and fever of various grades of severity; (12) orchitis and epididymitis; (13) gonorrheal rheumatism of varying forms.

Spasmodic and congestive stricture of varying degrees of severity may occur as one of the phenomena following sound infection. A point worthy of consideration is the fact that the results of sound infection may occur at a point remote from the traumatism and infection inflicted by the sound. Prostatic abscesses undoubtedly occur in many instances as a result of prostatic and periprostatic inflammation due to infection of the tissues through the medium of the lymphatics, the atrium of infection being in some portion of the urethra quite remote from the point at which the serious results develop.

Having considered the results of sound infection, it becomes necessary to consider prophylaxis. Much can be accomplished by rendering the urine aseptic by the administration of various internal remedies. The best urinary antiseptic for internal administration is, in my opinon, oil of eucalyptus. Boric acid, or boric acid combined with salol, are only moderately efficient by comparison. By asepticizing the urine as nearly as possible, the absorption of infectious materials by the tissues at the site of such traumatisms as passing a sound may have inflicted may possibly be avoided.

An essential point for consideration is the condition of the genito-urinary tract at the time it is proposed to pass the sound. If the existing inflammation is at all acute, no instruments whatever should be passed when it is possible to avoid it.

I believe the form of sound is the most important point for consideration. The shaft should be several inches shorter than the ordinary urethral sound, and its point should be distinctly conical, corresponding as nearly as possible to the distal extremity of a metallic urethral exploring bulb. The sound should be perfectly aseptic, and there is no better method of making it so than by allowing a stream of hot water to flow upon it. In lubricating the sound some unirritating aseptic or antiseptic material should be used, vaselin or albolene with the bichlorid of mercury of a strength of about one in two thousand is as good a lubricant as I know of. Rancid oils and soap should be avoided. In systematic dilatation of stricture the contraction should not be dilated more than one size at a sitting, and great care should be taken not to introduce a sound of a size sufficient to put the stricture tightly on the stretch. In addition to the danger of traumatic infection, such a faulty method of introduction of the sound in the treatment of stricture is likely to transform a previously tractable stricture into the resilient and irritable type.

A CONTRIBUTION TO THE KNOWLEDGE OF THE ANATOMY OF THE LEVATOR ANI MUSCLE.

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WHILE differences of opinion may reasonably exist as to the function of a muscle, it would seem that investigators should agree upon the disposition of its fibers. An examination of the literature bearing upon the levator ani muscle, however, reveals the most astonishing differences in its description. These differences have reference more particularly to the course and insertion of its fibers. Concerning its origin there is practical agreement. Gynecologists and obstetricians, as a class, consider the muscle in the female as a very important structure, while many maintain that it is the principal support of the pelvic contents and an active factor in parturition. For this reason writers upon the anatomy of the female pelvis have given it especial consideration. The ideas which prevail of its form and function have been gained, therefore, from this class of investigators, rather than from works on descriptive anatomy.

Since there is practically no dispute as to the origin of the levator the following is quoted from Testut: "The muscle originates (1) in front from the posterior surface of the body of the pubic bones on each side of the symphysis; (2) behind from the internal aspect of the ischiatic spine, and (3) in the interval included between these two points from a sort of fibrous arch which extends from one of the above points to the other and which may be regarded as a thickening, on its margin, of the obturator fascia."

The beautifully illustrated work of Savage on the female pelvic organs may be considered classic, and the following, quoted from Symington[1] expresses his views: "Savage divides each levator into two portions, which he names the pubococcygeus and the obturatorcoccygeus." I believe that these two portions differ not only in their arrangement but also in their function. The pubococcygeus arises from the posterior surface of the pubes and the posterior layer of the triangular ligament. Its fibers pass backward on the side of the lower part of the vagina, and on the side of the anal canal, to the last two pieces of the coccyx. A few of its innermost fibers turn inward, in the perineal body, in front of the internal sphincter of the anus. Behind the anus, and in front of the coccyx, there is a partial blending of fibers of opposite sides in the middle line.

"The pubococcygei act as sphincters of the lower part of the vagina and of the anal canal, but they cannot compress either the upper part of the vagina or the rectum. They also draw upward and forward the perineal body and coccyx."

"The obturatorcoccygeus consists of those fibers of the levator ani which arise from the pelvic fascia between the pubes and the ischial spine. Its fibers run backward and inward to the coccyx. These fibers have no direct action upon any of the pelvic viscera. They constitute a thin layer of muscle, which, in addition to raising the coccyx, can elevate the pelvic floor a little, after it has been depressed."

Although the nomenclature of Savage has not been adopted, his description has been extensively accepted as authoritative, and his illustrations have been very generally copied.

The description of the levator ani, as given by H. Von Luschka, has also been accepted with great confidence by many gynecologists and obstetricians. It differs materially from that of Savage, and is well set forth by Dr. Robert L. Dickinson of Brooklyn, N. Y., in the September number of the *American Journal of Obstetrics* for 1889. From this article, which is profusely illustrated, we would gather that *no* fibers of the muscle reach the vaginal wall; that a few, more deeply seated than the rest, and coming from the pubic band, turn into the perineal body; that most of the fibers of pubic origin unite behind the rectum with their fellows from the opposite side *without the intervention of tendon* and that *none* reach the coccyx; that the fibers from the ischial spine are inserted into the coccyx; that those of the fascial origin curve downward and backward, with varying obliquity, *and with concavity forward*, to be inserted into a raphe reaching from the rectum to the coccyx. The muscles of the two sides thus together form, in the main, a sort of funnel-shaped sheet slung about the rectum posteriorly, and "hugging the concavity of its end curve."

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[1] *Edinburgh Medical Journal*, March, 1889.

We note that Dr. Dickinson misrepresents Savage in stating that he named the fibers of the levator as arising from the spine of the ischium, "ischiococcygeus." The "ischiococcygeus" of Savage is the *coccygeus* of other authors.

Recently I have been investigating the levator with no little care. Dissections of the muscle in the male and in the female, both of man and of the lower animals, have been made, and the findings carefully recorded. Though as yet not prepared to enter into minute detail, I have progressed far enough to unhesitatingly declare that the description of Savage is much more nearly correct than that of Luschka, and that the illustrations of Dickinson create an entirely erroneous impression.

While the remarks which follow have reference to the levator ani as it appears in the female, I desire to call attention to the fact that the muscle is as well, if not better, developed in the male.

The levator ani muscle may very properly be divided into three portions. This division has reference both to the origin and to the insertion of its fibers. The so-called pubococcygeus of Savage arises from the intrapelvic surface of the body of the pubes and the posterior or superior layer of the triangular ligament. This latter fascia blends with the obturator fascia along the descending pubic ramus, thus rendering the origin of this portion of the muscle more extensive than usually described. It will be seen also to be on a plane, superficial to and intersecting that of the portion of the muscle posterior to it. The fibers arising as above described soon gather to form a band distinctly separable from the rest of the muscle, and about one-half inch in width and one-eighth inch thick. It takes a course nearly horizontally backward to the anus. At its insertion it is bilamilar. The superficial fibers are continued into the external sphincter ani muscle. Of the deep fibers a few turn forward and are lost in the perineal body. I have been unable to trace them to the median line. By far the greater number take a backward course. Posterior to the rectum they come in close contact with their fellows from the opposite side, but are *not* continuous with them "without the intervention of tendon." Some terminate in the recto-coccygeal raphe, but many reach the coccyx. I have been unable to verify the statement of some authors that fibers from the pubic band terminate in the rectal wall or even in a fascia closely connected therewith. The pubic band as it sweeps by the vagina is separated therefrom by an interval of one-quarter inch, but a few stray fibers from its lowermost origin cross it and terminate in the vaginal wall.

The fibers of the levator ani which arise from the ischial spine from a distinct bundle separable also from those of fascial origin. It takes a transverse course and is, for the most part, inserted into the fourth coccygeal segment. A few superficial fibers, however, turn forward and are inserted into the recto-coccygeal raphe. This bundle might very properly have been denominated the ischiococcygeus muscle, though it was to the coccygeus that Savage gave that name.

The intermediate portion of the levator ani is thin and membranous. It consists of a number of fascicles which arise from a fascia weakly attached to the "white line." Their direction is downward, backward, and inward toward the rectum and the recto-coccygeal raphe. I have not been able to trace any of these fibers to the rectal wall, but find that when they reach the side of the rectum and approach the raphe, all turn sharply backward and run nearly parallel to the middle line. Some reach the coccyx; others become aponeurotic before doing so.

It has been the good fortune of the author to have examined the pelvic floor of a young female over which the head of a fetus of eight-months' development had passed within the preceding forty-eight hours. In this case there was no evidence of the stretching of the fibers of the lavator, such as is described and illustrated by Dr. Dickinson in the article referred to. On the contrary, the muscle was compact, firm, and well developed, and demonstrated in a most marked manner the points to which attention has been called in this paper.

The levator ani muscle is lined by the thin anal fasci, which is closely adherent to it. On the other hand, it can be easily dissected from the strong rectovesical fascia which lies superior to it and which sends processes to the bladder, the vagina, and the rectum, and between them. I am disposed, therefore, to disagree with those authors who describe this latter structure as part of the sheath of the muscle.

There can be no doubt but that the muscle, from its insertion into the perineal body, the external sphincter ani, the postrectal raphe, and the coccyx, pulls upward and forward the postvaginal structures of the pelvic floor. A very noticeable result also of traction upon the pubic band is to evert the anus.

Those who have conducted investigations upon the lower animals will have noticed the proportionately greater development of the levator ani in those possessed of a tail, and that its function in such animals is almost entirely to act upon that structure.

While it was not my intention in presenting the foregoing considerations to venture outside the field of anatomy, I am tempted to suggest as objections to the claim made that the levator ani is the principal support for the pelvic contents of woman :

1. That in the human subject it belongs to the class of rudimentary muscles.

2. That the weakness of its origin as well as the direction and the insertion of its fibers is inconsistent with such design.

3. That it is unphysiologic for a muscle to furnish a continuous support.

4. That the rectovesical fascia is in itself sufficient, when intact, to afford the required support.

5. That the muscle is no better developed in the female (in whom support is most required) than in the male.

CLINICAL MEMORANDUM.

PRIMARY TUBERCULOSIS OF THE BREAST OCCURRING DURING PREGNANCY.[1]

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PRIMARY tuberculosis of the breast is one of the uncommon conditions, the description of which is found in the literature of general surgery. Gynecologic and obstetric writings afford but scanty mention of this complication of pregnancy and the puerperal state. In the *Annals of Surgery* for January, 1897, Powers reports a case, and has been able to find but thirty-seven others in the literature of surgery. With the exception of the monograph by Piscacek of Vienna, I recall no account of these cases in the writings on gynecology or obstetrics.[2] In the present instance, the condition was diagnosticated during pregnancy, and the puerperal period was treated in accordance with this complication. The diagnosis was confirmed at operation, subsequently to the patient's recovery from childbirth.

The patient, B. W., aged seventeen years, applied for admission to the Jefferson Maternity, November 18, 1896, being pregnant seven and a half months. Her family history was negative; her own health had been fairly good before pregnancy occurred. Regarding her antecedents, nothing positive could be learned. She had intended to have an abortion produced, but was persuaded to allow the pregnancy to go to term. She was admitted to the Maternity on November 28th, although her labor was not expected until the latter part of January or the first of February.

On admission, she complained of pain in the right breast, aggravated by moving the arm and shoulder, and sufficiently severe to cause loss of sleep at times. On examination, her pelvis was found to be normal; the fetus occupied the first position, the vertex presenting. Its movements were vigorous, and its heart-sound was plainly recognized. The mother's urine was normal, and she complained only of the pain in the breast. She was excessively pale and somewhat anemic. The breast was found to be swollen, firm, and indurated in its outer and lower quadrant ; the gland was freely movable upon the pectoral muscle, the induration being confined exclusively to the parenchyma of the breast. No evidence of fluctuation could be obtained, nor could the axillary lymphatics be detected. There was no evidence of heat in the affected breast, the skin was slightly discolored, and the pain was described as cutting rather than throbbing. The patient stated that she first noticed the swelling a month before admission, when she was about six-months pregnant. The pressure of her clothing aggravated her suffering. No considerable amount of fluid could be pressed from either breast. Enough was obtained from the affected side for microscopic examination, when abundant colostrum corpuscles were detected. The patient denied having suffered violence of any sort. The breast was thoroughly cleansed with an antiseptic solution, a breast-binder applied, and the patient put to bed, with the hope that the induration might lesson. A week's rest in bed was followed by a slight diminution in the size of the breast, but no essential change occurred.

On December 24th, a month after admission, the secretion from the breast was thoroughly stained and examined by Dr. David Bevan, and tubercle bacilli detected. Examination of the other portions of the patient's body revealed no evidence of tuberculous infection. The case was seen in consultation by Dr. W. W. Keen, and the question of immediate operation was discussed. As no abscess could be detected, and as the patient could ill afford the loss of blood which must accompany an amputation of the breast during pregnancy, it was determined to wait until her child had been born, and she had completed her puerperal period, before resorting to a radical procedure. Should fluctuation occur at any time, it was decided to immediately incise the breast and evacuate its contents. The patient was accordingly given appropriate tonics, and the breast-bandage continued. There was a steady increase in the size of the breast during her pregnancy, and under active exertion, pain became decided. Her temperature was repeatedly taken, but found to be normal. Her general condition remained good.

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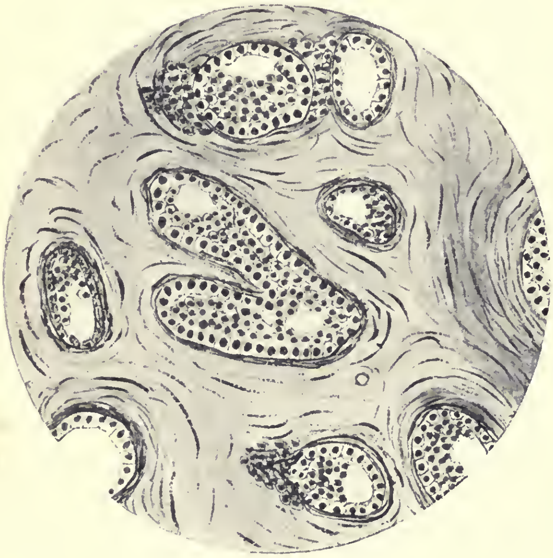
[1] Read at the Twenty-second Annual Meeting of the American Gynecological Society, Washington, D. C., May 5, 1897.

[2] The following are the few surgical papers available on this subject:
Bender, *Centralblatt für Chirurgie*, 1891, p. 819.
Mandray, *British Med. Jour.*, December 19, 1891, p. 197.
Roux, Geneva, 1891.
Recinche, *Centralblatt für Chirurgie*, 1895, p. 484.
Gaudier and Pépaire, *Rev. de Chirurgie*, September, 1895, p. 768.

On February 2d her confinement occurred, the child being delivered with forceps as her strength proved unequal to the completion of labor. The child was fairly nourished, considering the mother's condition. Its placenta was examined by Dr. Bevan to determine the presence of tubercle bacilli, but none could be detected. The mother made an uninterrupted convalescence from labor. She was not allowed to nurse her child, the infant being artificially fed, and the breasts being tightly bandaged. On March 19th, Dr. Keen, with my assistance, amputated the right breast in its entirety. The fascia in front of the pectoral muscle was resected with the glands. The axillary fascia was incised, but no enlarged glands were found in the axilla. But little loss of blood accompanied the operation, and although the patient suffered shock, she rallied quickly from it.

FIG. 1.



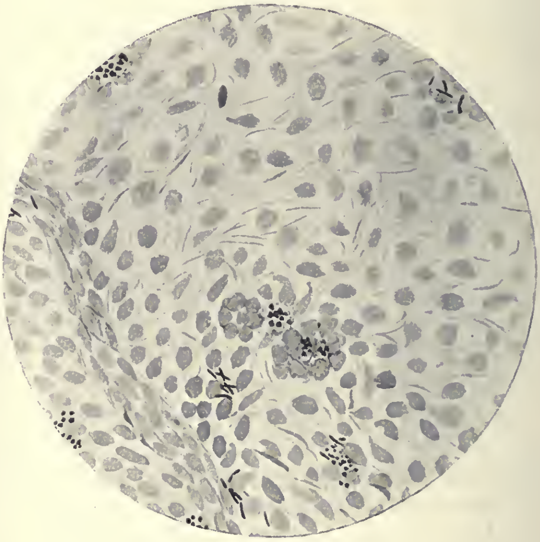
Adenomatous Tissue in Affected Breast.

Gross examination of the breast showed the presence of small multiple abscesses in the various acini. A hard mass in the upper portion contained a considerable amount of pus in its center. In the lower portion a tumor, resembling an adenoma, was found. Stab-cultures were made from the breast, and the gland was given to Dr. Beven for examination; his report is as follows:

"Inoculations of tubes of agar-agar at a temperature of 90° F., gave growths of micrococcus pyogenes albus after three-days' time. Microscopic examination of pus scraped from the wall of the abscess showed micrococci and tubercle bacilli in abundance. A section was made of the breast through the outer margin, microscopic examination of which showed the structure of an adenoma; slight hemorrhage had occurred into the stroma of the gland, and its epithelial cells were proliferating and beginning to invade the stroma. This tissue closely resembled a beginning carcinoma. A second section was taken from the center of the gland, showing hemorrhage more marked than in the preceding. A third section from the margin of the tumor showed increased growth of epithelial cells, as shown in Fig. 1. A fourth section comprised the wall of the abscess where were found marked proliferation of connective-tissue cells, and embryonic tissue in the form of leucocytes. Tubercle bacilli and micrococci were found in abundance; this is illustrated in Fig. 2."

A review of the pathology of this case shows that the patient had an adenoma of the breast, which became infected with tubercle, and under this infection broke down readily in the formation of pus. The fact that the other breast remained without evidence of disease may be owing to the absence of an adenoma on that side, and the better resistance of the tissues to the tuberculous invasion. She made an uninterrupted recovery from the operation, and repeated examination of the other breast failed to reveal evidences of disease. The child did well for several weeks, but perished April 14th from marasmus. A *post-mortem* examination of its body failed to find evidence of tuberculous infection.

FIG. 2.



Tubercle Bacilli in Connective Tissue of Breast.

In the absence of systemic infection, it is naturally interesting to determine the manner in which the breast could have become diseased. Although the patient denied all information, inquiry from others makes it more than probable that the breast became infected through contact with the mouth of a tuberculous individual. It is hard to account for the condition on any other ground. It is interesting to observe that the infection remained entirely limited to the mammary gland. It caused no reaction which manifested itself in fever or general disturbance. Had a diagnosis not been made, however, and had the child been allowed to nurse, its infection must have followed. During the last few years in my out-patient service at the Philadelphia Polyclinic, two cases have been detected by my assistant, Dr. Coles, in which mothers having tuberculous breasts were nursing tuberculous infants. I have seen a similar condition in the wards of the General Hospital in Vienna.

So far as diagnosis is concerned, this is impossible in the early stages without careful microscopic examination. In anemic young women, a first pregnancy is sometimes accompanied by considerable turgescence of the breasts, which may be increased to induration by the rubbing and pressure of clothing. The upper border of a corset tightly worn may greatly aggravate this condition. Soon after the admission of this patient, a married women entered the Maternity, suffering from a tumor of the breast, following a kick or blow; she was at the same period of pregnancy. In her case, a simple induration was diagnosticated because the microscopic study of the contents of the breast revealed no other condition. She subsequently made a perfect recovery, and nursed her child. Sarcoma and scirrhus growths may also occur in pregnant patients, and may increase rapidly during gestation; they generally produce, however, greater injury to the general health.

Through the courtesy of Dr. W. W. Keen, I am enabled to add the following note of the only case of primary tuberculosis of the breast which he has seen with the exception of my own: The patient, Miss C., aged twenty-five years, was first seen November 6, 1889. The late Dr. Agnew had diagnosticated a sarcoma of the left breast. Upon examination, the patient was found to be cachectic and said she had felt tired and miserable for a year. On August 12th, while in Europe, she observed a lump at the axillary border of the left breast; it felt as though bruised, although there was no history of an injury. She had sharp pain in the entire breast. The tumor grew rapidly until it not only involved the outer border of the breast, but extended into the axilla as far as the posterior border and up to the vessels. The patient suffered also from tingling in the arm. The nipple was not involved. Examination of the blood and urine was negative. The clinical diagnosis by Dr. Keen and Dr. Agnew was that of sarcoma. At operation, the tumor at the border of the breast was found to consist of two tuberculous abscesses which had invaded not only the axilla, but the breast also. The entire gland was removed. The wall of both abscesses was completely dissected out and one gland, the size of a pigeon's egg, and a number of smaller ones, were removed, some of them from just beneath the clavicle. They were very adherent to the walls of the vessels, especially to the veins, and were removed with difficulty. Dr. Coplin found that not only were the abscesses tuberculous, but that the breast itself was involved extensively in tuberculous degeneration. The patient made a complete and permanent recovery.

MEDICAL PROGRESS.

Ultimate Results of Hysterectomy for Carcinoma.—BOUILLY has been investigating the results of hysterectomy for carcinoma of the uterus, and he publishes in the *Bulletin General de Thérapeutique*, March 15, 1897, the rather discouraging results of his researches. Of forty-six patients in whom recurrence had taken place, in two instances there was no evidence of the disease for three years after operation, while in one recurrence was not detected for four and a half years. These three patients were aged forty-seven, sixty, and thirty-eight years respectively, and the operation was performed in the early stages of the disease. In no less than forty-one instances recurrence took place in one year or less, and in nearly every one of these death occurred a few months later. In women under thirty-five, recurrence seems almost certain.

In the light of these statistics, the question may well be raised whether hysterectomy for cancer is justifiable, a question which Bouilly answers in the affirmative, not only because in many cases the symptoms make life without surgical relief almost unbearable, but also because these results, discouraging as they are, are not worse than those obtained by operation upon cancers in other portions of the body. In the period between the vaginal hysterectomy and recurrence the patient believes herself cured, and for this time she possesses all the results of a radical cure. There is no hemorrhage, no pain, no disturbance of function, and no visible evidence of mutilation to annoy her, as is so often the case in operation for cancer of the breast, etc. These are the ideal results of surgical interference, and, even if they last only a few months, the time gained is very grateful to the patient.

Traumatic Origin of Renal Calculi.—WEBER (*Münch. Med. Wochen.*, March 23, 1897) narrates the case of a man, aged nineteen, who fell from a ladder, striking upon his back and sustaining an injury to his head. There followed a complete paralysis of the left leg and a partial paralysis of both arms. There was also complete paralysis of the bladder and rectum, which continued for nearly six months, and then gradually disappeared. The paralysis of arm and leg was also recovered from. The diagnosis was made of hemorrhage into the spinal canal, with compression of the cord, which was relieved by gradual absorption of the blood clot. Two years after the accident the patient noticed that urination was painful and that he passed gravel. Cystitis was marked. Later, attacks of renal colic set in, and the patient died about five and one-half years after the accident. Both kidneys were the seat of suppurative pyelonephritis with dilated pelves, which contained numerous large calculi.

Weber was of the opinion that the fall in this case produced laceration of both kidneys, and that the extravasations of blood, acting as foreign bodies, produced inflammation and deposits of urinary salts.

Spontaneous Disappearance of Cataract.—KOENIG mentions an instance (*Le Progres Méd.*, May 1, 1897) of spontaneous disappearance of cataracts in both eyes in a woman of seventy years suffering also from diabetes, and passing at times as much as six ounces of sugar *per diem*. Suitable glasses were ordered and the patient was put upon a diabetic diet. Two years later she was seen again, and was found to be still suffering from the diabetes, though in a less degree. The diet was still rigidly ahhered to. The eyes were absolutely free from the slightest opacity.

Fracture of the Clavicle Treated by Incision and Suture.—Spencer (*Amer. Journ. of the Med. Sciences*, April, 1897) reports two cases of fracture of the clavicle treated by incision and suture of the fragments. In both cases the subclavius muscle was found lying between the fragments, and in one of them there was in addition a loose piece of bone. The ends of the bone were sutured together by fine catgut, the stitches being passed through the periosteum only. The incision in the skin was closed with fine silkworm-gut sutures, and the arm was dressed in the Velpeau position with a light plaster-of-Paris bandage. The result in both of these cases was excellent, and the deformity was insignificant.

Regeneration of Bone from Periosteum.—In *Medicine*, March, 1897, Thompson records the case of a boy, aged fourteen, who received at close range a charge of shot in the upper third of the right arm. The wound was dressed by a physician, several detached pieces of bone being removed, and an attempt was made to wire the ends of the bone together. Ten days later, when Thompson first saw the case, the wound was suppurating, the soft parts were edematous, and the general condition of the patient was bad. Measurements showed that four inches of the humerus was wanting, and the periosteum was found in shreds and strips. The wound was cleansed and treated daily with antiseptic irrigations, and the patient recovered in less than four weeks, there being solid bony union and scarcely any shortening. The defect in the skin had been partially made good by skin-grafting. The strength and motion of the right arm was completely restored.

Radical Cure of Hernia.—In the March number of the *Annals of Surgery*, Coley reports 360 operations for the radical cure of hernia, with one death, due to double pneumonia in a child with bronchitis. The method employed in most cases was that advocated by Bassini, although in some instances the canal was sutured without transplantation of the cord. Of 325 cases of inguinal hernia, only 6 were known to have relapsed; 26 cases were lost sight of. The remaining patients were in good condition. Over 200 of these had remained sound for more than a year. As most cases which recur do so within six months after operation, the outlook for permanent recovery in these cases is very satisfactory.

Means of Recognizing Minute Perforations of the Tympanic Membrane.—Valsalva's maneuver (which consists in forcible expiration while the mouth and nose are tightly closed) fails to detect very small perforations of the tympanic membrane. These can be recognized (*The Medical Week*, April 30, 1897) by either of two methods, one of which consists in introducing a Siegle's pneumatic speculum so as to rarify the air in the external auditory meatus. If there is no perforation the tympanic membrane is seen through the glass plate in the speculum to bulge outward. If there is the least opening in the membrane it remains immobile. The other method consists in connecting the auditory meatus of the patient by a rubber tube to one opening of a double-mouthed vial filled with tobacco smoke. The patient then executes Valsalva's maneuver and if there is the smallest opening smoke will issue from the vial.

Injections of Osmic Acid in Neuralgia.—Franck (*Centralblatt f. Inn. Med.*, April 10, 1897) recommends the use of osmic acid in obstinate cases of neuralgia, a remedy which has proved invaluable in his hands, as well as in those of several others quoted by him, especially in the worst cases. The injections produce a sharp pain which lasts but a few moments, apparently because the nerve fibers are destroyed by the action of the acid. No visible necrosis or ulceration follows its use. A one-per-cent. solution is employed and must come in direct contact with the nerve in order to relieve the pain. This explains the fact that in some cases success was not obtained until several injections distributed over a period of from one to six weeks had been employed. For facial neuralgia it is advisable to begin with minute doses.

THERAPEUTIC NOTES.

For Pruritus of Jaundice.—

℞	Menthol		gr. xxiv
	Alcohol Ether	aa	ʒ iv.

M. Sig. For external use, apply as a spray to itching regions.

For Vaginismus.—Lataud advises irrigation with potassium chlorate and tincture of opium, aa 200 parts; tar water, 200 parts; a tablespoonful to a quart of water at bedtime, after which the following bougie should be inserted:

℞	Cocain hydrochlorate	gr. iv
	Ext. belladonna	gr. ii
	Strontium bromid	gr. iv
	Oil of theobroma	ʒ ii.

For Gonorrheal Cystitis in Women.—

℞	Ammonium benzoate	ʒ iii
	Tr. hyoscyamus	ʒ iss
	Ext. buchu, q.s. ad.	℥ ii.

M. Sig. A teaspoonful in water four times daily.

For Constipation.—

℞	Aloin		gr. iv
	Ext. cascara sagrada		gr. viii
	Ext. belladonna Ext. nux vomica	aa	gr. iii.
	Ft. Cap. No. viii.		

M. Sig. One capsule at night as required.—*Montgomery.*

For Eczematous Blepharitis.—

℞	Hydrogen dioxid	℥ i
	Vaselin	ʒ v
	Lanolin	ʒ iiss.

M. Sig. Apply to inflamed lids.—*Wood.*

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SATURDAY, JUNE 12, 1897.

VENEREAL DISEASE IN INDIA.

UNDER the title of "The Moral and Physical Ruin of the British Army in India, Due to a Defiance of Nature's Laws," an editorial writer in the *Indian Medical Record* has some very hard things to say about the Contagious Diseases Acts, and also about the present system, or lack of system, in attending to the health of the soldier from a sexual point of view. The former was bad, and the latter is worse in his opinion. The *Indian Record* advocates the remedy that was suggested in the NEWS of last week, *viz.*, marriage, or as the writer laconically states it, "a home and a wife for every man."

"It is our conviction then," says this writer in closing, "that the enforced celibacy of the greater portion of our European soldiery is an economic mistake. . . . In the Annual Report of the Sanitary Commissioner with the Government of India for 1895, these significant facts are recorded: (1) Among the European troops of India there were 522 admissions from venereal diseases for every 1000 men, while among the native troops there were only 31. (2) Those native troops that are serving in regions farthest away from their homes, appear to be the most affected by venereal disease.

"What an oft-repeated object lesson is illustrated by these facts. Will not the Government of India and of Great Britain learn the lesson here taught and thus redeem the British nation from physical and moral decay and also at the same time remove a blot that tarnishes its escutcheon before the whole civilized world? Away from their homes our soldiers suffer. Plainly God's law is marriage, and the cure is in the hands of our rulers. They prefer concubinage and prostitution for our British soldiers, and the result is destruction and death. What monumental folly to proscribe marriage for the British soldiery in India A reversion to the old Honorable East India Company's tactics of having life-time service in India for the British soldier, with *a home and a wife for every man*, is the only plan that will ever prevent the moral, physical, and financial ruin and wreckage of human life, that is being perpetrated every day in India by the blind folly of the British Indian Government in regard to our European fellow-subjects of the Queen in India. The whole Christian community of this country should raise its voice in united protest against this vile and inhuman violation of Nature's laws, and plead for a recognition of that justice and liberty that would give our European soldier a HOME AND A WIFE in India."

In connection with this subject attention is called to the exceedingly interesting and instructive article of Passed Assistant Surgeon Crandall on the control of venereal diseases in the United States Navy, which appears in this issue of the NEWS. This will be followed by others of a similar character, with the hope of shedding sufficient light upon this complicated subject to be of service in the evolution of some rational system of controlling venereal disease.

THEORY OF THE MOVEMENT OF THE NEURON.

THE theory of the movement of the neuron, as it is called, has begun to attract general attention, and ought to be known to every physician who pretends to keep in touch with medical advance.

It was in 1890 that a German (Rabl-Ruckard) first advanced the idea that the essential nerve-cells, the neurons, were not fixed, but had ameboid movements; but this idea attracted little comment. Later, Lépine and Duval of France and Dercum of this country came independently to the same conclusion, and the more the theory is discussed, the wider becomes its support. Whether it is finally proven to be true or false, it explains far better than any previous theory many physiologic and pathologic nervous phenomena.

Take a case of hysteric paralysis of a single limb —complete—scarcely to be recognized from a gross lesion, but which may in a few hours completely disappear. No one longer holds the idea that hysteria is simulation. How does the theory of the neuron explain the phenomena? Very simply. The cortical cells in the motor area have processes extending toward the surface—dendrites—and a protoplasmic process extending downward through the white matter of the brain, the internal capsule, the crus, the pons, the medulla, and into the spinal cord, where it terminates in a brush-like extremity—the end tuft. Here it has a certain relation with the motor cells in the anterior horn of the cord—probably one of contact, though that is not definitely known, According to the theory of movement of the neuron, in hysterical paralysis the nerve-processes retract and this contact is broken. If under the influence of hypnotic suggestion or otherwise the paralysis disappears, that is simply saying that the abnormal contraction of the nerve-process is, for the time being, relieved; contact once more takes place and motion is possible.

Take a physiologic process—sleep. This has often been explained as a cerebral anemia, notwithstanding the fact that true cerebral anemia, for instance after hemorrhage, is marked not by sleep, but by wakefulness. Evidently, if the neurons are functionally active, their dendritic processes must be in contact; without this, consciousness is impossible. When the nerve-cells are exhausted by fatigue, there is every reason to believe that their volume shrinks, and it is therefore more and more difficult for them to remain in contact. When relaxation comes, the processes retract and unconciousness, *i.e.*, sleep supervenes. It is extremely probable that ether and chloroform circulating in the blood cause the neurons to retract their processes and so produce unconsciousness.

The theory is indeed fascinating, and it grows more so as the special functions of cortical areas are investigated. Thus, if a song is sung, the sequence of sound-vibrations impinges upon the peripheral auditory neurons, that is, the nerve-cells of the spiral ganglion of the cochlea. It produces in these neurons a change which affects the relations which their neuraxons (that is, their centripetal processes) bear to the nerve-cells of the auditory nuclei of the medulla, and, secondarily, to the neurons in the auditory area of the cortex. It is probable that the effect produced upon the latter is to cause them to retract, extend, or otherwise move their processes, and thus bring about a change in the relations which the various neurons of the auditory area of the cortex bear to one another. It is evident that the same sequence of sounds must always produce the same combinations in the cortical area.

The act of conception of a familiar sound or series of sounds will consist in the reformation among the neurons of the same combinations as were produced when the sounds actually impinged on the ear.

Memory, also, in accordance with this theory, depends not upon fixed cerebral structure, but upon the combinations of the neurons formed from time to time being the same as, or similar to, those previously formed. For example, when a familiar tune is heard the old combinations among the neurons in the auditory cortical center are reformed and the tune is "remembered." But the excitation does not stop here but travels through the general cortex of the brain setting in motion a series of combinations among the neurons along the oldest and best-traveled lines; and visual memories as well as auditory ones are produced, and besides hearing the familiar song, there is a recollection of the singer, or of a parlor, or of an operatic performance, and so forth.

To follow out all the possibilities of this theory is beyond the scope of this article, whose purpose is only to call attention to it, and to make it clear by brief illustrations. A thoroughly comprehensive article on the subject—one which is free from unnecessary technicalities—is written by Dercum and published in the *Philadelphia Polyclinic*, April 3 and 10, 1897.

ECHOES AND NEWS.

Modern River Dwellers.—It is calculated that 21,000 people sleep nightly aboard the steamers on the rive Thames.

Mount Sinai's Training School.—Twenty-seven nurses were graduated June 2d from the Mount Sinai Training

School for Nurses, at Sixty-seventh street and Lexington avenue, New York.

Assistant Surgeon-General of New York.—Nathan Sturges Jervis was commissioned at the Adjutant-General's office, Albany, June 4th, as Lieutenant-Colonel and Assistant Surgeon-General of the State National Guard.

Criminal Proclivities Inherited.—Alfred Fouillée declares in the *Revue des Deux Mondes* that in the case of eighty per cent. of young French criminals, the moral condition on the side of the parents is deplorable. Vice, debauchery, and drunkenness in the parents become criminality in the child.

A Woman Resident Physician.—Dr. Mary O'Malley who graduated last month from the Medical Department of Niagara University has been appointed one of the residents at the Buffalo Hospital of the Sisters of Charity. Dr. O'Malley is the first woman to receive such an appointment in Buffalo.

Schlatter Reported Dead.—A despatch from El Paso, Texas, announces that Schlatter, the divine healer who had such a remarkable though brief career in Denver, Col., in 1895, has been found dead in the mountains near Casa Grande, Mexico. He had been fasting, and apparently had starved to death.

The Most Honorable Position of the Medical Profession of England.—The *London Medical Press* says that the Blue Ribbon of the surgical profession in England is undoubtedly the presidency of the Royal College of Surgeons, and there are few who are successful in obtaining a seat in the Council who do not aspire to this honor.

Lord Lister and the British Army.—Now that Lord Lister has interested himself in the discussion before the House of Lords on the health of the British Army in India in reference to venereal disease, the British medical periodicals are encouraged to believe that some reasonable provisions for inspection and control will be enacted.

New York Delegates to the Charities Conference.—The State Board of Charities has appointed Drs. Enoch V. Stoddard of Rochester, Stephen Smith of New York city, Charles S. Hoyt of Canandaigua, and Mr. R. W. Hibbard of New York city, Secretary of the Board of Charities, to represent the State at the National Conference of Charities and Correction Organizations to be held in Toronto on July 7th.

The University Bellevue Hospital Medical College.—It is credibly reported that the combination entered into by the University Medical School and the Bellevue Hospital Medical College has been annulled. The Utopian dreams of an ideal medical institution which were inspired by the announcement of this coalition have vanished. The perfection of the future plans and aspirations of each institution will now be awaited with no little interest.

Foreign Doctors in Italy.—In Italy foreign doctors are permitted to practice among foreigners only, unless they possess an Italian diploma, or are expressly called in consultation for special cases. As the competition in the medical profession is becoming more active the Italian doctors are agitating the question of restricting the practice of foreigners to those who have obtained an Italian diploma. The resident English and American doctors have taken alarm from this and are taking steps to prevent the restriction.

Meeting of the American Electro-Therapeutic Association.—The next meeting of this Society will take place on Tuesday, Wednesday, and Thursday, September 21, 22, and 23, 1897, at Harrisburg, Pa. The Harrisburg Academy of Medicine has offered the use of their building, and the Dauphin County Medical Society has appointed a special committee of arrangements to act for the Association. There is a promise of a fine display of electrical instruments and their practical operation. MAX EINHORN, M.D., secretary, No. 20 East Sixty-third street, New York.

Liberal Gifts to the Flushing Hospital.—Less than three months ago the Board of Managers of the Flushing Hospital Association issued an appeal to the public asking for contributions with which to pay the operating expenses of the institution. Cash contributions and subscriptions were plentiful. A few weeks later a millionaire resident of Whitestone sent his check for $10,000 to the hospital management, and last Thursday another Whitestone resident authorized a hospital director to have the hospital buildings thoroughly overhauled and repaired at his expense. Now the hospital has funds that will last at least three years. Happy Flushing Hospital!

Recreation Piers in New York.—The first of the recreation piers has been finished. It is at the foot of East Third street, and will be opened to the public on June 19th. The pier is 300 feet long, 60 feet wide, and cost $54,000. The Dock Board is at work on three more recreation piers—at the foot of Twenty-four, and One Hundred and Twelfth streets, East River, and at the foot of Christopher street, North River. One or two of them will be ready for use this summer. Such provision for the relief of mothers and children during the hot days of summer is a happy idea and a wise expenditure of funds. The cool refreshing air which circulates along the river front with the incoming tide can thus be enjoyed by thousands to whom a day excursion on one of the charity barges is impossible on account of household duties.

London Sewage.—The sewage of the largest city in the world, London, is handled by two main pumping stations on each side of the Thames, with machinery of an aggregate of 3000 horse-power, capable of pumping some five hundred million gallons per day, and a like number of storm-water pumping stations, capable of pumping directly into the river 150,000,000 gallons per day—the latter being used for preventing flooding in the lower parts of the metropolis when a heavy fall of rain occurred at or about the time of high water, when the storm outlets were closed by the rising tide. The outfall works for the purification of the sewage, the dry-weather flow of this exceeding 200,000,000 gallons per day, consists of settling tanks and their accessories for the chemical treatment of the sewage, and the means for removing the sludge produced to the ocean. The tanks at Barking are rated at 20,000,000 gallons, and those at Crossness at 31,000,000, the sludge, amounting to more than 2,000,000 tons, being discharged into the open sea at a distance of about fifty miles from the works by a fleet of steamers.

Dangerous Inks.—The *London Lancet* calls attention to the serious injuries which sometimes result from an apparently trifling scratch or puncture made with the pen. The chemical constituents of the ink which is introduced by the pen into the wound are not capable of producing septicemia, but microscopic examination proves that the ill-effects are due to the liability of ink to contain pathogenic bacteria. Dr. Marpmann of Leipsic has recently published the results of the microscopic examination of sixty-seven samples of ink used in schools. Most of them were made with gall-nuts, and contained saprophytes, bacteria, and micrococci. Nigrosin ink, taken from a freshly opened bottle, was found to contain both saprophytes and bacteria. Red and blue ink also yielded numerous bacteria. In two instances Dr. Marpmann succeeded in cultivating from Nigrosin ink a bacillus which proved fatal to mice within four days. This ink had stood in an open bottle for three months, and the inference to be drawn from the inquiry is that ink used in schools should always be kept covered when not in use. The practice of moistening the pen with the tongue is likewise a dangerous one.

Obituary.—Dr. Henry E. Turner, probably the oldest practicing physician in Rhode Island, having recently observed his sixtieth anniversary as a doctor, died in Newport June 2d, after a brief illness. He was born in Greenwich, R. I., eighty-one years ago, and early went to Newport, where he at once identified himself with local affairs. He was for many years city physician of Newport.—Dr. Francis L. Dickinson, one of the oldest and best-known physicians of Rockville, Conn., died in New Haven June 2d. Dr. Dickinson was born in Chatham, Conn., in 1817, and was graduated from the Yale Medical School in 1840. He served several terms in the State Legislature, and was State Senator in 1877 and 1878.—Dr. Asa F. Pattee, a practicing physician for thirty-one years, died at Boston May 31st. He was a native of New Hampshire, and was descended from a long line of physicians, extending back to William Pattee, who was physician to Oliver Cromwell and Charles II. He received the degree of doctor of medicine from Dartmouth College, and in 1859 began practicing in Amesbury, Mass. In 1883 he was elected Professor of Materia Medica and Therapeutics at the College of Physicians and Surgeons, Boston. He was a member of the Massachusetts Medical Society, the American Medical Association, and for several years President of the Boston Therapeutical Society. He was an honorary member of the Botanical Society of Italy, and in 1887 received the degree of M.A. from Dartmouth College. His contributions to medical literature were many.

A Medical Student Seventy-five Years Old.—Recently we had occasion to call attention to the advanced age of a medical student in Bodwin, Maine. His experiences are surpassed by a Russian, the following account of whom is taken from the *Lancet:* "A student named Borysik has just passed the final examination at Warsaw University qualifying him to practice as a doctor of medicine in Russia. Borysik was born in 1822, and was educated at Suvalk Higher Grade School with a view to becoming a medical man. After matriculation lack of funds prevented him from at once proceeding to the university, and he was compelled to work as a tutor for twenty years in order to save enough money to enable him to continue his studies. At the end of that time he presented himself at the Warsaw Medical Academy and passed the entrance examination with distinction. Before he could begin his studies the Polish rebellion of 1863 broke out, and Borysik, who was now forty-one years of age, threw himself into the movement with all the enthusiasm of a youthful revolutionist. The revolt was suppressed, and Borysik was exiled to Siberia, where for thirty-two years he underwent hard labor in the silver mines. In 1895 he received a free pardon and returned to Warsaw. In spite of his age and the hardships he had endured, Borysik had lost none of his enthusiasm for medical work, and took up his studies where he had left off in 1863. After a two-years' course this remarkable man has now, at the age of seventy-five years, passed the final medical examination with honors, and will begin to practice in Warsaw."

The Antivivisectionists.—Again we are pained by the receipt of letters from different towns and signed with different names, but written on the same subject and paper, and apparently on the same typewriter. Both are based this time on the vigorous remarks of Dr. W. J. Robinson about the vivisectionists, which were printed in this column a few days ago. One comes from Sing Sing, and bears the signature of "Sydney Lawrence"; the other nominally originated in Yonkers, and appended to it is the name "A. Morris." Both of these epistles are couched in courteous and good-tempered language, as their predecessors have been, if memory serves. Long and sorrowful experience with this particular sort of literature has produced the conviction that there are not in the whole country two antivivisectionists who can discuss the one question that interests them with an approach to common decency of speech. Mr. Lawrence-Morris can do that, and more, and we are almost tempted to publish his letters. If he will only read a few of the very accessible authorities on recent progress in medicine and surgery, the Lawrence part of him will not have to ask what the vivisectors have accomplished, and the Morris part will no longer regard the demonstration of anatomic facts before classes of infants as the one ambition of scientific investigators. At present Mr. Lawrence-Morris's letters are of insufficient interest to justify publication in any except journals devoted to the study of morbid and arrested mental development. His case is not hopeless, however, and if he would not try to live in two towns at once he might easily find time to acquire information enough to make his communications welcome and printable.—New York *Times*, June 7th.

CORRESPONDENCE.

OUR VIENNA LETTER.

[From our Special Correspondent.]

THE AUSTRIAN GOVERNMENT PLAGUE COMMISSION IN INDIA—FIRST REPORTS OF YERSIN'S SERUM FOR PLAGUE NOT CONFIRMED—INSUFFICIENCY OF THE ILEOCECAL VALVE AND ITS CAUSES — PROFESSOR NEUSSER ON THE DIAGNOSIS OF CARCINOMA OF THE STOMACH—RECENT DECORATIONS FOR AUSTRIAN PHYSICIANS.

VIENNA, May 15, 1897.

AN unofficial preliminary report of the work of the Commission sent to India by the Austrian Government to investigate the plague has just been published. So far forty-one autopsies have been made, and owing to rigid antiseptic and hygienic precautions and extreme care in the handling of material the members have escaped infection. They are more fortunate in this respect than their colleagues of the German Government Commission. One of the latter, Dr. Stricker, became infected through an autopsy wound and had a genuine attack of the plague. It fortunately proved to be but a slight attack, and he recovered after an illness of but a few days.

It would be interesting to know what the natives think of these meddlesome foreigners who come from so far, thrusting their heads into the lion's jaws to study the dreaded plague close to the bedside, and yet not satisfied, with utter disregard of the danger, pursue their studies even on the bodies of the dead, Such action must accomplish much in reassuring the common people and keeping them from giving way to the senseless panic which so often does much to spread disease in a time of epidemics.

The Commissioners do not seem to be as sanguine of the efficacy of Yersin's serum as are their colleagues from France and do not seem to have observed such unfailing favorable results from its use. Whether this is to be set down as a little "Chauvinism," German-speaking scientists being characteristically slow in admitting that anything good emanates from France, or whether, as is usually the case in things medical, the first reports were a bit high-colored by the sanguine confidence of pioneers remains to be seen. Meantime the world cannot help but admire the thorough spirit of self-forgetfulness in the cause of science which prompts men to calmly put themselves in positions of ever imminent danger in the hope of learning enough of the much-dreaded plague to be able to stay its ravages.

At a recent meeting of the Vienna Medical Club, Dr. Herz demonstrated certain points in the pathologic anatomy of the ileocecal valve. The subject is not a new one, but most of the peculiarities found *post-mortem* in this valve have been considered to have no clinical significance. Dr. Herz divides the conditions he has observed into relative and complete insufficiency of the valve, with a further stage of chronic thickening, induration, and permanent pouting of the edges which he names ectropion. He has found that such insufficiencies occur especially in heart cases and in chronic dysentery. The sclerotic ectropion occurs after long continuance of these two conditions and in chronic alcoholism. He demonstrates the relative and complete insufficiency of the valve by subjecting it to certain pressures of water. A perfect valve will resist water pressure enough to cause rupture of the intestines. Relative insufficiency is, of course, a purely artificial distinction applied when the valve will tolerate only a certain amount of pressure—for him about twenty feet. The whole subject is usually slighted by clinicians and even by pathologists and yet is concerned with such important organs that the calling of attention to it cannot fail to be of interest.

Professor Neusser began his clinics for the summer semester with a series of three clinics on carcinoma of the stomach. As the great point of interest in the cases is the early and positive diagnosis of the condition, and as Neusser is looked upon as one of the greatest of diagnosticians some notes on the subject may prove interesting.

The usual points of physical diagnosis are made clearer by putting the patient into a warm bath when much resistence to palpation, owing to tense unyielding abdominal muscles, is encountered. It is also a routine practice to determine the position of the tumor by inflation of the stomach with carbonic acid; the parts of a seidlitz powder being swallowed separately. Points for the confirmation of the diagnosis are found in the results of the examination of the stomach contents, the blood, and the urine. Notwithstanding all the work which has been done on the subject, and usually the very positive claims of inventors of tests of the finality of certain reactions and the pathognomonic significance of certain findings, Neusser considers no single point or even series of points as of absolute diagnostic significance. The absence of free hydrochloric acid in the stomach contents and the presence of lactic acid after the stomach has been washed out and a test meal has been given may mean much or little according to circumstances. The absence of all the digestive elements points to universal atrophy of the gastric glands rather than to cancer, though they may be absent as a secondary consequence of the latter.

Neusser attaches considerable significance to the blood findings in cancer. This is, however, to be expected as much of his own original work has been done on the blood. The absence in cases of carcinoma of the normal digestive leucocytosis which has been found to occur very constantly in Neusser's clinic even when patients retain their appetite and can take considerable quantities of albuminous food he considers seriously significant. When to this is added the poikilocytosis, the decrease in number and in hemoglobin contents of the red cells and the presence of nucleated red corpuscles we have what Neusser calls the chlorotic blood picture of carcinoma. The blood symptoms are of special importance for the differential diagnosis from tuberculous tumors in the stomach region which are usually accompanied by a cachexia anemia and loss of weight suggestive of cancer.

In the urine two points are looked upon as of significance—the acidity and the amount as compared with the amount of liquid taken. The hyperacidity of the urine secreted by carcinoma patients is extremely difficult to neutralize in the system. Large doses of carbonate of sodium are given for days in succession and if the urine does not become alkalin the result is considered as of diagnostic value. When considerably less urine is passed than the amount of liquid taken, that is to say, only one-half or slightly more, a non-absorption of liquid by the stomach is considered to be present and this would in cases with other suspicious symptoms point to cancer.

When all has been said, however, there is only a congeries of probabilities, and no absolutely pathognomonic symptom, or series of symptoms. With regard to surgical interference, Neusser considers it unwarranted whenever the tumor is found to move with the diaphragm in respiration. He determines this by endeavoring to fix the tumor in its lowest position of deep inspiration. Failure to retain the tumor under the fingers during expiration means that it is adherent to the spleen or liver, or that it has infiltrated a large part of the stomach, and these conditions contraindicate radical operation.

The following decorations for Austrian physicians from the Imperial government were announced on May 1st: Professor Anton Draschke, the Cross of the Royal Servian Order of St. Sara, of the first-class; Professor Karl Stoerk, the laryngologist, the Imperial Russian Order of St. Stanislaus, of the second class; Professor Friedrich Schauta, the obstetrician and gynecologist, the Princely Bulgarian Order of St. Alexander, of the third class; Dr. David Tyrnauer, a practitioner of Vienna, the Royal Servian Order of St. Sara, of the fourth class, and the Princely Bulgarian Order of Merit, of the fourth class.

Perhaps our republican American ideas do not permit us to appreciate these marks of royal imperial favor as much as we should. Perhaps, too, we do not realize all the honor that is thought to be conferred by them in the eyes of our Austrian colleagues. We cannot help but think that in the multiplicity of orders and classes, shared no doubt by others whose claims upon imperial favor may often be no more than political adroitness, or, to use the harsher terms, party treachery, or some of the many pretexts that ministers find for the recommendation of political favorites, the doctors' long years of work in practice and teaching are not very suitably rewarded.

TRANSACTIONS OF FOREIGN SOCIETIES.

Paris.

THE USE OF METHYL-BLUE IN THE TREATMENT OF MALARIA—RICARD'S AMPUTATION OF THE FOOT—SYME'S AMPUTATION OF THE FOOT—A CLASSIFICATION OF EIGHTY CASES OF APPENDICITIS—TESTING THE SERUM DIAGNOSIS OF CHOLERA.

AT the session of the Academy of Medicine held Tuesday, April 13th, **LAVERAN** presented to the Society a *résumé* of a monograph by Cardamatis of Athens, advocating *the use of methyl-blue in the treatment of malaria.* Methyl-blue cannot be considered a genuine substitute for quinin. It is recommended in cases in which, for some reason or other, the quinin salts cannot be given. As is well known, quinin, even in small doses, sometimes causes hemoglobinuria; it is also thought to be at times capable of producing abortion. In these cases methyl-blue may be substituted. It is also a much pleasanter remedy for children. The dose is from 10 to 15 grains daily. No ill effect other than that of cystitis has been noticed, and this subsides as soon as the administration of the drug is discontinued.

At the Surgical Society, held April 7th, **DELORME** spoke of seven cases of *Syme's amputation of the foot,* performed by himself. Six of these cases were for tuberculous arthritis and one for gangrene. The results were excellent in all cases. The old objection to this operation, namely, that it favored the retention of pus, is not any longer of force. The only disadvantage which it presents is that of slight shortening, but this is largely compensated for by the absence of recurrence.

RICARD described *an amputation of the fore part of the foot* performed by himself with good result. It is often necessary in performing Syme's and Roux's operations to resect a part of the tarsus in order to obtain a sufficiently long flap to cover the wound.

Ricard's method consists of the extirpation of the astragalus and the pushing of the os calcis into its place. Owing to the flattening of the heel which follows, flaps which before the removal of the astragalus were insufficient may now be united. If the calcaneum protrudes too far, a portion of it may be resected. The essential condition is firm coaptation of the anterior tendons of the leg with the posterior and plantar tendons so as to get a musculo tendinous ligament capable of keeping the calcaneum in position and of overcoming the contraction of the Achilles tendon. The operation is easy to perform and the calcaneum takes the place of the astragalus in its relations with tibia and fibula.

At the session of the Medical Societies of the Hospitals held April 9, **TALAMON** *reported upon eighty cases of appendicitis,* which he classifies as follows: (1) Acute appendicitis with immediately diffuse peritonitis (7 cases, all fatal—2 with, 5 without operation). (2) Acute appendicitis with partial suppurative peritonitis (14 cases, with 8 recoveries after operation; of the 6 other patients, 4 recovered, 1 died, and no information was obtainable of the sixth). (3) Acute appendicitis with partial fibrinous peritonitis, or plastic appendicitis (30 cases, all followed by recovery, 2 only after operation). (4) Simple parietal appendicitis (all cured by medicinal treatment). (5) Recurrent chronic appendicitis (in all but 3 of which operation was refused or put off; the 3 patients operated upon recovered completely).

The question of recurrence is intimately connected with that of intestinal disturbances antecedent to the appendicedic crises. In one-half of all the cases there was found no trace of any such disturbance, the attack occurring suddenly in the midst of perfect health. Talamon is in favor of a preventive operation after an attack of appendicitis only in children affected with the special variety of "family appendicitis." In these cases the liability to perforation appears to be greater, and operation is advisable at the first attack, no matter how slight it may be, as an appendicitis which just touches the peritoneum appears to be more frequently followed by perforation than a plastic appendicitis.

At the session of April 23, ACHARD and BENSAUDE described the results obtained by them in *testing the serum diagnosis of cholera.*. The serum of 14 Egyptian patients was investigated, and in 13 cases an agglutinating reaction was obtained with cultures of the cholera vibrio, in 2 on the first and in 3 on the second, in 4 on the third, in 2 on the fourth, in 1 on the sixth day of the disease, and in 1 on the twenty-eighth day of convalescence. The early manifestation of this reaction, if true, is of great practical importance; but as the history in these cases was not especially accurate, too much stress must not be laid on this point. The serum of six persons in good health and twenty-four suffering from various diseases was examined. Agglutinating reaction to an imperfect extent was found to be present in two cases of uremia. It is therefore still more necessary in cholera than in typhoid fever to admit as positive tests only those cases in which the reaction is very distinct. The examination is more difficult in cholera than in typhoid fever. On account of the film which follows on the surface of a broth-culture, it is usually necessary to employ an emulsion of microbes from fresh cultures on agar diluted with broth or a normal salt solution, and tested before the addition of the suspected serum, to make sure that agglomeration is not already present. The reaction usually manifests itself in from five to twenty minutes, and is fully as distinct as that obtained from typhoid fever.

Vienna.

STEREOSCOPIC PICTURES BY ROENTGEN RAYS—IDIOPATHIC ATROPHY OF THE SKIN.

At the session of the Imperio-Royal Society of Physicians held April 2d, EXNER showed Röntgen photographs made upon the stereoscopic principle. They were obtained by the use of two vacuum tubes so placed as to get a view of the object from different sides, as is done in making the ordinary stereoscopic photographs. By this method foreign bodies in particular can be exactly located, the appearance to the eyes being that of a plastic image, and not of a flat one.

NEUMANN showed two patients with idiopathic atrophy of the skin. In one, a man aged thirty-two, whose history dated back two years, there were limited areas of atrophy similar to skin atrophy of old age and situated in the breast, on the back, on the nates and over the femur, and on the thigh and leg. The affected skin became much wrinkled and in many places covered with scales. The spots on the abdomen presented a white center surrounded by a light prown pigmentation. Neumann looks upon this affection as an inflammation in the upper layer of the cuticle, but the number of cases is so small that it is impossible to draw a definite conclusion concerning the etiology of the trouble.

Dr. Ely Made Professor at Yale.—Dr. J. Slade Ely of the College of Physicians and Surgeons of New York has been appointed Professor of Theory and Practice of Medicine in Yale University.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

The Semicentennial Meeting, Held at Philadelphia, June 1, 2, 3, and 4, 1897.

(Continued from page 773.)

GENERAL SESSION.

FOURTH DAY—JUNE 4TH.

After the meeting had been called to order by the President, and the minutes of the preceding day's business had been read, the Chairman of the Committee on Arrangements announced the entertainments planned for the day.

The address on State Medicine was then delivered by DR. JOHN B. HAMILTON of Illinois, who took for his topic

THE PREVENTION OF TUBERCULOSIS.

In his preliminary remarks the great importance of this subject was dwelt upon, inasmuch as one death in every seven in this country was shown to be due to tuberculosis, the total deaths from this disease in the United States during the census years of 1850, 1860, 1870, 1880, and 1890 respectively, having been no less than 345,963. One-third of all surgical diseases, excluding injuries from mechanical violence, were also attributed to tuberculosis.

The speaker then mentioned that the proof of the heredity of tuberculosis had been established, and did not question the possibility of infecting animals by the injection of tuberculous milk; but maintained that, except in instances of udder tuberculosis, direct evidence of transmission of tuberculosis by milk in man by ingestion is not yet positive. The alleged infection of dog and cats by eating tuberculous meat was also considered uncorroborated by extended experiment.

The prevention of tuberculosis cannot be accomplished in a day, but with prompt measures on the part of health boards, and with the aid of the confidence and the understanding of the laity, its ravages may be made less; and it is highly important that the public should be fully educated to an understanding of its causes and methods of propagation. The necessity was pointed out of keeping before agriculturists, dairymen, stock-breeders, and butchers the fact that the bacillus tuberculosis is the sole cause of the disease, and of securing their complete cooperation with the health officer regarding preventive measures. The public should understand that tuberculosis is a preventable disease; the schoolmaster should understand the value of gymnastics and calisthenics in securing for his pupils immunity from the disease; and the consumptive should understand that he has no right to allow himself to become a center of infection by carelessness, or to marry while a subject of the disease.

It was noted that the cooking of tuberculous meat and the boiling of infected milk prevents their doing positive harm; that the innocuousness of a consumptive's breath has been demonstrated by the experiments of Bergey, and that the greatest source of danger lies in infection by the dried sputum.

The factors in successful prophylaxis were considered to be (1) the early diagnosis of the disease, as an aid to which, in cases presenting vague physical signs, the tuberculin test in carefully graduated doses is not less valuable in man than in the lower animals. (2) The guarding against infectious food and drink being issued to people anywhere. (3) Proper notification to the sanitary officer of the occurrence of cases of tuberculosis, especially walking cases, so that, in conjunction with the attending physician, thorough disinfection of bedding and sputum may be secured. (4) The prompt destruction of cattle proved to be tuberculous. (5) The discouraging of marriage between consumptives. (6) The treatment of tuberculosis in favorable climates, either in suitable sanataria, or in colonies.

In closing, brief reference to the advances in the treatment of tuberculosis was made, by measures such as the education of the laity regarding the disease, the use of hydrotherapy and pulmonary gymnastics, and proper medication, including serum-therapy.

At the close of his address, a vote of thanks was tendered Dr. Hamilton by the Association.

The following delegates to the International Medical Congress at Moscow, August, 1897, were appointed: Drs. G. S. Mitchell, J. E. Hyndman, Charles Dennison, A. M. Miller, H. L. E. Johnson, George M. Sternberg, D. L. Huntingdon, A. Marcy, Sr., H. D. Holton, Thomas MacDevitt, J. N. Quimby, and George R. Fowler.

A question was raised as to the expediency of sending a delegate to the coming meeting of the British Medical Association at Montreal, and the subject provoked considerable discussion *pro* and *con*, until it was ended by the President appointing Dr. Holton as the delegate to represent the American Medical Association at that meeting.

The Executive Committee reported that a prize medal valued at $50 was to be offered annually for the best essay on some scientific subject. This was approved by the Association, after the value of the medal had been increased to $100, and a committee of three to decide the competition was appointed. The question of railroad rates again came up for discussion, and it was voted that the President appoint within thirty days a committee of seven to report at the Denver meeting next year the rates offered by the railroads to various points, and that these rates be taken into consideration in the selection of a meeting place for 1899. The scheme of creating a relief association was discussed, but no more definite conclusion was arrived at than the reference of the topic to an appropriate committee for elaboration. The official approval of the Executive Committee was given to a resolution submitted to it by the Ophthalmological Section, recommending the general adoption of Credé's method for the prevention of ophthalmia neonatorum. It was concluded to defer until next year the consideration of the contemplated change of the name of the Section on Dental and Oral Surgery to that on Stomatology.

Other business consisted in the announcement of an annual prize of a medal valued at $100, offered by President Senn, for the best paper on some subject in surgery, to be awarded by competition; the decision to publish 3000 copies of the charter, constitution, and by-laws of the Association; the sending of a marked copy of that part of Dr. Keen's address relating to animal experimentation to every representative and senator in the United States Congress; and an unanimous vote of thanks to the citizens of Philadelphia for their hospitality during the meeting.

All business having been transacted, the newly elected president of the Association, Dr. George M. Sternberg, was introduced. In the course of a few remarks which he then made, Dr. Sternberg took occasion to state to the Association that the efforts which had been made to secure a representative of the medical profession in the cabinet of the President of the United States had been entirely unsuccessful, and that in his opinion the plan was impossible of accomplishment.

At the conclusion of President Sternberg's remarks the Association adjourned.

SECTION ON PRACTICE OF MEDICINE.

SECOND DAY—JUNE 2D.

(Continued from page 753.)

Dr. H. G. McCormick of Williamsport, Pa., read a paper, entitled

ONE HUNDRED CASES OF TYPHOID FEVER.

He divided his experience in the treatment of typhoid into two periods, in the first he had 24 cases with 3 deaths, and in the second 100 cases with 1 death. He had treated the first series according to the methods laid down in the text-books and by the Brand method, while in the treatment of the second series he had broken away from the old method and had treated his patients according to the dictates of reason. The longest time any of his patients had been under this treatment was twenty-one days, and the shortest, thirteen days. Of the 100 cases, 19 patients had hemorrhages, some of them several, and 11 had relapses. The treatment was not novel. The diet was carefully looked after, and no more food was given than could be easily digested. If it was not digested the quantity was decreased, or the diet was changed. He had found it better to give a mixed diet of milk, animal broths, and buttermilk than to keep the patient on milk alone. Each patient was given a tepid sponge bath twice a day. The bowels were kept thoroughly open, and for this purpose calomel was given every two hours until a free movement was obtained. The colon was washed out every day, the addition of salt to the enema sometimes being desirable. Water was given by the mouth as freely as the patient would take it. Two-drop doses of guaiacol were given every two hours for the antiseptic effect, and because this drug did not undergo changes in the intestinal canal but remained guaiacol at the ileocecal valve, just as it was at the mouth. In cases where guaiacol could not be borne, the carbonate of guaiacol was given instead. For weak heart, strychnin was given, and for hemorrhage, 15 minims of ergotole, hypodermically, and iced normal salt solution, rectal injections. Transfusion of normal salt solution was resorted to when the patients became anemic from the hemorrhages. In not a single case of hemorrhage was opium or acetate of lead given. He believed that no greater error was ever perpetuated than by the teaching that lead and opium should be given for hemorrhages, and a multitude of mounds in the cemetaries bore evidence to this fallacy. He admitted that opium checked the peristaltic action of the intestines, but at the same time it also dried up all the secretions and added to the danger of perforation of the bowel. For the reduction of fever, inunctions of from 10 to 25 drops of guaiacol were given, with excellent results. The use of the coal-tar preparations he regarded as dangerous, and should be condemned. He had seen two deaths directly attributable to the use of these drugs. He believed that typhoid fever, if seen prior to the seventh day, was capable of being aborted, and death should be a thing of rare occurrence.

He summed up as follows: Keep the bowels open, and keep the alimentary canal antiseptic; give as much food as can be digested; give plenty of water, both by the mouth and by the rectum; never give opium or acetate of lead. If these directions are followed out there will never be a death from typhoid fever.

Dr. Wm. Osler of Baltimore said that he had been very much interested in Dr. McCormick's paper, and he was glad to see that in many respects Dr. McCormick was still a young man, but he hoped that as he grew older his wisdom would increase with his experience. Dr. McCormick's record of 100 cases of typhoid without a death was certainly good, but it was not remarkable, for a record of 140 cases treated by the Brand method without a death had been made. There was another thing which made him think that Dr. McCormick was still an extremly young man, and that was that he had had 19 cases of hemorrhage in 100 cases of the disease and still clung to his method of treatment. If he (Osler) had 19 cases of hemorrhage from his method of treatment, he would change to another less risky one the very next day. Instead of opening the bowels as Dr. McCormick recommended, he (Osler) would like to open the minds of some of the medical men of the country and put a little common sense into them. He had also found that those cases of typhoid which ran the easiest course were those with the most confounded constipation.

Dr. Tyler of Pennsylvania said that he could not agree with Professor Osler that if he had nineteen per cent. of hemorrhage with any particular treatment he would quit that treatment right away. He took a different view of the matter, and if he had nineteen cases of hemorrhage out of 199 would consider that he was dealing with an unusually severe form of the disease, and a plan of treatment which gave ninety-nine per cent. of cures in such a case he would certainly stick to, notwithstanding Dr. Osler or "any other dogmatic professor."

Dr. J. M. Anders of Philadelphia said he wished to counteract any effect that might be created by the statement of Dr. McCormick that opium should not be given in typhoid fever. It was necessary, in case of hemorrhage, to put the body completely at rest, and this could only be done by means of opium.

Dr. J. E. Woodbridge of Cleveland replying to the attack made on his method of treatment by Dr. Upshur, said that the latter had not quoted him correctly in regard to some of the claims which he was said to have made for the treatment. Dr. Upshur had also said that reports of cases were of no value, but if there were no reports of cases how were physicians to decide whether a theory had merit or not? If, in one epidemic of a disease, there was thirty per cent. of deaths, and in another epidemic of the same disease there were no deaths under a different method of treatment, were not such reports of value? He was prepared for any amount of criticism on account of the publication of his method of treatment, and he had not made the statement that typhoid fever could be aborted until after he had been warned repeatedly that he would be—he hesitated for the proper expression, and Dr. Osler suggested "jumped on," which Dr. Woodbridge accepted. In any of the statements which he had made in reply to criticisms, he had never used Dr. Osler's name except with the highest respect, and as an exponent of all that was best in medicine, not only in this country, but in the world. He read a letter which he had just received from a physician speaking in high terms of the use of his method, and he stated that he had 1500 or 2000 more from physicians all over the country; so that if he was wrong in his belief in the efficacy of the treatment he advocated so were also these 2000 physicians. He stated that he regards diarrhea in typhoid as an evidence of the severity of the disease.

Dr. McCormick, in reply, said that somewhat early in his education as a physician he had conceived the idea that the curing of disease was the ultimate aim of the physician, and he had practised medicine on that principle ever since. Acting on this principle, no stronger impression of the necessity of abandoning the use of opium in the treatment of typhoid fever had appealed to him than an experience he once had in consultation with a young man who was fresh from the teaching of Professor Anders. He was treating a case of typhoid fever, and had given a hypodermic of morphin, when shortly afterward the abdomen became swollen and as tense as a drum. He then gave a second dose of morphin, and Dr. McCormick was called in consultation soon afterward. The patient was comatose at the time, and died shortly afterward. Dr. McCormick then said to the attending physician that he thought the second dose of morphin should not have been given and the patient might have survived the first; and he was met by the response that he had never been taught anything else than that opium should be given in typhoid. Surgeons had taught for a long time that opium should not be given in surgical inflammations, and he thought the same teaching was applicable to medical inflammations. There was a time when he believed that college professors were infallible and that text-books were infallible, but when his patients died under the treatment advocated by the college professors he had made up his mind that there was something wrong with the treatment.

Dr. Osler replied that college professors had eyes and ears, and some of them had common sense, and those who had not the latter quality, when their typhoid patients had hemorrhages, would not give opium.

THE CLINICAL SYMPTOMS, BACTERIOLOGIC FINDINGS, AND POST-MORTEM APPEARANCES IN CASES OF INFECTION OF HUMAN BEINGS WITH THE BACILLUS PYOCYANEUS

was the title of the next paper by **DR. L. BARKER** of Baltimore. This paper was a report of a bacteriologic investigation into the cause and properties of the common "green pus" or "blue pus" so often found on surgical dressings. French scientists had investigated the characters of the organism, and had found that the bacillus pyocyaneus was fatal to some animals not to others, and that while it was usually not fatal in human beings eleven cases had been reported in man in which death was due to this organism. It produced local toxic inflammations as well as general septicemia; it might cause eruptions on the skin, and would give rise to peritonitis, meningitis, pericarditis, and inflammation of the mucous and serous membranes generally. The bacillus pyocyaneus did not multiply in the blood. It might cause infection of the nervous system, and even lead to paralysis. The diagnosis of pyocyaneus infection could be made by finding the bacillus in the urine, and also by the peculiar odor of the patient. The prognosis was grave so far as the cases he had seen were concerned, but as it was probable that a great many individuals had pyocyaneus infection which was never recognized and recovered, it was probable that it was not as grave a condition as appeared from the cases he had had under observation. The treatment for the local manifestations of the disease was the same as for any other form of inflammation, with this exception: that there was a pyocyaneus antitoxic serum. This was the first serum made, antedating that of diphtheria and tetanus, but owing to the infrequency of the recognition of infection by this organism there was no demand for the serum, and consequently it was not obtainable in this country. In view of the probability of the more frequent recognition of the infection in future it was probable that the serum would be soon obtainable.

In reply to a question by **DR. OHLMACHER**, Dr. Barker stated that in several cases the bacillus pyocyaneus had been found pure, but in other instances it was mixed with the bacillus coli communis. He believed that it was generally found associated with other micro-organisms.

DR. F. A. PACKARD of Philadelphia next read a paper on

TRICHINOSIS AND THE TRICHINA SPIRALIS.

The case, of which this paper was a report, occurred in an Italian, aged twenty-four, a farm laborer. It was impossible to get a complete history from him, even by means of an interpreter, though it was learned that he had eaten a piece of raw pork sausage. On admission to the hospital he had a temperature of 101.2° F., with muscular pain in the thighs and legs. There a few granular casts in the urine. There were a few rose spots on the abdomen, which disappeared upon pressure and were regarded as suspicious. Previous to admission to the hospital he had had sweating for four days. A diagnosis of trichinosis was made. The temperature rose to 104.6° F. on several occasions and the pulse was accelerated, but not out of proportion to the fever. The blood was examined, but the examination was not as complete as it might have been. In the eye marked changes were found. An examination of the larynx was negative. Typhoid fever was excluded by the character of the temperature curve, the lack of splenic enlargement, etc. Rheumatism was considered, but no form of rheumatism would give such pains in the legs and thighs except the so-called muscular rheumatism. Influenza was ruled out with more difficulty, and a diagnosis of non-distinguishable tuberculosis was also excluded. A piece of the gastrocnemius muscle was cut out from one leg, and large numbers of the trichina were found. The operation gave so much relief to the distension of the leg that it was easy to get the patient's consent to the removal of a corresponding piece of muscle from the other leg. These pieces of muscle were fed to white rats, but the experiments were not yet completed. This was the fourth case in which he had made the diagnosis of tricinosis during life, but the only one in which he had been able to demonstrate the presence of the organisms in the muscles.

DR. J. M. ANDERS of Philadelphia read a paper upon

MYXEDEMA,

with a report of two cases. An interesting point in regard to one of the cases was that the glycerin extract of thyroid could not be taken, even in small doses, without the production of very distressing symptoms, while the powdered extract was well borne.

THE TREATMENT OF EXOPHTHALMIC GOITER AND OTHER VASOMOTOR ATAXIAS WITH PREPARATIONS OF THE THYMUS GLAND AND OF THE ADRENALS

was the title of a paper read by **DR. S. SOLIS-COHEN** of Philadelphia. A number of patients were presented who had been under treatment for varying lengths of time. The milder forms of Graves' disease were more common than the severer forms of Raynaud's disease. The symptoms were lack of co-ordination, heart murmurs, in some cases epistaxis and petechiæ; in others, bronzing of the skin, peculiar subjective symptoms, polyuria, etc. The disease was more common in women than in men, and was frequently associated with menstrual disorders. In most cases a distinct temperature relation could be made out, the patient being better in warm weather and worse in cold weather, or *vice versa.* Some of the phenomena of Graves' disease might appear transiently in normal healthy individuals. Such persons were apt to suffer from urticaria, due to eating certain food or taking certain drugs. As regards the treatment, this was somewhat confusing. One patient recovered, and others partially recovered from different methods of treatment. One patient who had partially recovered was given the thyroid gland in mistake for the thymus by the butcher who furnished them. This patient was so much improved by the thyroid-gland treatment that he left the hospital and was lost sight of for a time.

The discussion on this paper was of the running question and answer form, during which Dr. Cohen stated that the dose of the thymus gland began at 5 grains a day and increased to 30 grains in five or six doses. He did not believe that such a thing as thyroidism existed, bad results being due to faulty preparations of the gland. Instead of getting his glands from the butcher, he now got the best commercial article on the market. No other treatment was employed during the administration of the glands.

Dr. Judson Daland of Philadelphia gave a very interesting and instructive talk on the

PLASMODIUM OF MALARIA,

illustrated by a valuable series of lantern slides.

SECTION ON SURGERY AND ANATOMY.

THIRD DAY—JUNE 3D.

The first paper presented was by Dr. Z. J. Lusk of Warsaw, N. J., entitled

SOME ADDITIONAL FACTS RELATING TO SKIN GRAFTING, TECHNIC, ETC.

After calling attention to the details necessary for success in skin grafting, Dr. Lusk described a method which he had devised and employed with success. He uses epidermis which has been obtained by vesication caused by canthos or which separates after vesication from burns or scalds. He removes the cuticle carefully, keeping it flat, and preserves it in sterile gauze and cotton. The epidermis dries in a short time, after which it may be kept in this condition indefinitely. He has used epidermis obtained by the methods described, after it had been separated for more than one year, with perfect success. The graft is placed on the granulating surface in the dried condition, care being taken to apply the proper surface. The dressings should not be changed for several days after the operation. The advantages which Dr. Lusk claims for this method are the ease and facility of obtaining the necessary quantity of material and the better results obtained.

Dr. E. W. Holmes of Philadelphia read a paper on

THE TRAUMATIC FEVERS,

which he classifies as follows:

1. Primary fever. (*a*) Suppurative fever, acute and chronic; (*b*) true septicemia, acute and chronic.
2. Secondary fever. (*a*) Sapremia; (*b*) pyemia.

The speaker called attention to the confusion that has hitherto existed regarding these fevers. The first form described was that which is due to absorption of aseptic fibrin ferment from a wound which remains sterile. The symptoms are all mild. There is no change to be observed in the wound and the patient makes no complaint. At the end of the fourth or fifth day the fever subsides spontaneously. This form of surgical fever is in no wise under the control of the surgeon and does not reflect at all on his methods. The treatment is simple and consists in proper rest and suitable diet.

True suppurative fever is due to the presence of microorganisms in the wound and to absorption of their products into the system. The condition is announced by a chill, which is followed by fever and sweat, and an examination of the wound will usually reveal pus. In many cases pus forms without the occurrence of a chill. This is probably explained by the local condition. If the pus forms slowly there is considerable infiltration and pressure, the lymphatic channels are compressed or blocked up, and they are thus prevented from conveying the products in the wound to the general circulation. If, on the other hand, the pus forms rapidly, and before there is time for the formation of a protecting wall, the lymph channels draining perfectly soon convey the poison to the system and evidences of constitutional reaction is observed early. In the condition just described there are no germs in the blood. In true septicemia the condition is due to micro-organisms in the circulation. The general symptoms noted in the previous form are observed in this condition to a more marked degree.

Sapremia is the form first described, one form of which frequently follows surgical operations. The condition is, however, too common in obstetric practice. The local treatment of sapremia is important. If the local conditions are improved, the symptoms rapidly subside.

Pyemia, the author thinks, is set apart from the other conditions on account of the abscesses which form in various regions of the body, besides the profound depression and typhoid condition which is more marked in pyemia than in any other of the traumatic fevers. The infection passes along the vascular and lymphatic channels. Pyemia is the result of a double infection—a pyogenic and a saprophytic. The symptoms appear about the second week. There are repeated chills, followed by fever and exhaustive sweats, a typhoid condition, hyperesthesia of the skin, and local abscesses. The mind remains clear unless an abscess forms in the brain. The rise in temperature coincides with the chill, the sweat quickly following.

The term arterial pyemia is applied to the lodgment of a fragment of a white blood clot at some point in the circulation, and should be dropped, as it tends to confuse the subject.

After the afternoon meeting had been called to order Dr. J. B. Murphy asked to be released from the position of Chairman for the coming year, to which he had been elected on the previous day, as he had been appointed to give the address in surgery at the next meeting. Dr. Murphy's request was granted. As the nominating committee had disbanded the Section proceeded to the nomination and election of officers for the ensuing year, which resulted in the selection of Dr. William L. Rodman of Louisville, Ky., for Chairman, and Dr. Clayton Parkhill of Denver, Col., for Secretary.

Dr. W. J. Mayo of Rochester, Minn., read a paper on

CICATRICIAL STENOSIS AND VALVE FORMATION AS A CAUSE OF PYLORIC OBSTRUCTION, WITH A REPORT OF FIVE CASES RELIEVED BY OPERATION.

He believes that stricture of of the pylorus caused by a healed gastric ulcer or by a valve formation is of more frequent occurrence than has been supposed. The diagnosis of pyloric obstruction is usually easy, the more or less regular vomiting of all the food ingested serving to establish the presence of this condition. If the stomach be inflated with air it may then be outlined by the usual aids in physical diagnosis—inspection, palpation, percussion, and auscultation.

The speaker prefers a medium abdominal incision, beginning at the ensiform cartilage and carried down as far as necessary, The Heineke-Mikulicz operation was advised for all cases of pyloric obstruction of benign origin to which it can be applied. In rare instances of marked cicatricial contraction the method is inapplicable.

Loretta's operation, the author stated, had failed to give permanent relief in a large proportion of cases. Pylorectomy, he said, should be performed in but few cases, and then only for the clearest indications, on account of the high mortality. Gastro-enterostomy for non-malignant stricture has given a mortality of about fifty per cent., and is therefore to be avoided in all cases in which pyloroplasty can be performed. The unequal thicknesses of the walls of the stomach and intestine is a weak point in this operation.

The after-treatment of these cases consists in the use of morphine to control peristalsis, rectal feeding for some days, and strychnin, if needed.

DR. L. H. ADLER, JR., of Philadelphia read a paper on the

PRESENT STATUS OF THE INJECTION TREATMENT OF HEMORRHOIDS.

The remarks were applied particularly to the condition known as internal hemorrhoids. The preparation used was that recommended in Agnew's "Surgery," and consists of acetate of lead, 2 drams; glycerin, 1 ounce; Calvert's No. 1 carbolic acid, 1 ounce, and water, 2 drams. The first two are mixed and allowed to stand twenty-four hours. The water is then added to the carbolic acid and sufficient of the lead acetate mixture to make the preparation measure two ounces. The author emphasized the necessity for the minutest care in the compounding of this mixture in order to secure the best result. It was also stated that it is essential to use the No. 1 acid. Since the speaker has been using this method he has been particularly pleased with the uniformly satisfactory results.

DR. T. S. K. MORTON of Philadelphia read a paper upon

TRANSPERITONEAL LIGATION OF THE ILIAC ARTERY, WITH REPORT OF CASES.

He has been able to collect twenty-eight cases of this operation, from literature and by correspondence. His own case was one of aneurism of the femoral artery, extending above Poupart's ligament, and therefore required the iliac ligation. The patient recovered.

DR, S. F. FRIEND of Milwaukee read a paper on

THE ETIOLOGY AND CLASSIFICATION OF TUMORS,

which was based upon a consideration of histology and pathologic anatomy.

DR. HOWARD LILIENTHAL of New York read a paper on

SERUM-THERAPY IN ACUTE SURGICAL INFECTIOUS DISEASES.

He referred to a number of cases in which the antistreptococcic serum had been used with apparent benefit. He particularly advocated its use as a prophylactic in cases in which septicemia might be expected to follow an operation. A similar recommendation has been made by Watson Cheyne, who has reported three cases so treated. While the serum is being used every proper surgical measure should also be employed, with the view of bringing about recovery. The author differs with those who contend that no such condition as immunity really exists.

DR. GEORGE R. FOWLER of Brooklyn read a paper on

THE DIFFERENTIAL DIAGNOSIS OF SURGICAL LESIONS IN THE RIGHT HALF OF THE ABDOMEN AND PELVIS.

The most common surgical condition of this region is appendicitis. After describing the usual symptoms Dr. Fowler called attention to the variations that might occur. Vomiting is not infrequently absent. The pain may be general over the abdomen rather than located above the umbilicus in the early stages of some cases, or in the right iliac fossa from the outset. Opium may obscure the symptoms, upon which a diagnosis might be made.

A perceptible tumor from appendicitis is almost never present before the end of twenty-four hours, and usually not until the end of forty-eight or seventy-two hours. The appendix may lie in any direction and the symptoms will depend upon the particular location of the organ. Among the commoner conditions that may simulate appendicitis the author mentioned cholecystitis, impaction of fecal matter, tumor, and in the female, tubo-ovarian diseases. About eighty per cent. of the cases of appendicitis occur in men. The difference between the symptoms of appendicitis and of tubo-ovarian disease, was dwelt on at some length. The onset in the former is usually acute; in the latter a history of previous trouble will generally be obtained. Vomiting is common in appendicitis and rare in disease of the adnexa. The tenderness in appendicitis is generally well localized, while in tubal disease it is more general. In the former the tenderness on palpation over the right iliac fossa is acute and much less sharp by vaginal touch. In the latter the external tenderness is comparatively slight, but very marked by vaginal examination. Chill is infrequent in appendicitis, but common in the acute exacerbations of disease of the adnexa. Rigidity of the abdominal wall is marked in appendicitis, and usually absent in tubo-ovarian inflammations. The latter, the speaker regarded, as a most valuable distinction. The tumor in a case of appendicitis appears at the end of two or three days, while it is usually present upon the first examination in pelvic inflammations. A careful consideration of these points will usually lead to a correct interpretation of the diseases in the right side of the pelvis and abdomen in women.

FOURTH DAY—JUNE 4TH.

DR. A. E. TRACY of Boston presented papers upon the following subjects:

(*a*) THE TREATMENT OF COLLES' FRACTURE. (*b*) THE PASSING OF PLASTER.

The author stated that before the work of Colles, the fracture which bears his name was considered either a posterior dislocation of the hand or an anterior dislocation of the radius. In regard to the treatment of the Colles' fracture, the speaker recommended, after reduction, the application of a simple splint, and gave his preference to a wood-fiber molded splint. The rules governing the treatment of this fracture he summarized under three heads: (1) Reduction. (2) Protection with a simple splint. (3) Passive motion of the fingers on the first day and of the wrist on the fifth day. In referring to the second portion of the title, Dr. Tracy claimed that plaster of Paris was frequently a source of danger to the vitality of the limb to which it is applied, and that it is uncertain in regard to retaining the fragments in position in the treatment of fractures. He also claimed that the plaster of Paris did not fix the parts beneath; as the swelling subsides considerable motion is permitted. It also prevents inspection of the part, which the speaker said was desirable in all cases of fracture. Besides, a permanent dressing, such as plaster of Paris, by preventing passive motion of the joints, tends to cause a marked degree of stiffness that is slow to disappear and troublesome in the convalescence. If, by any chance, the fragments should become displaced, the fact would not be known in the case of a plaster dressing, and union would take place in a faulty position.

The advantages claimed for the wood-fiber which he described are that by making a proper pattern the material may be molded accurately to the surface of the body without any intervening material. The splint is simply dipped in water, placed in position, a roller bandage applied, and the part is fixed immediately. The bandage may be removed as often as necessary and the part inspected, the splint having become molded and dried, fits accurately, and may be reapplied without disturbance. Passive motion of the joints may be employed early, and the lightness of the material used in the splint makes it a more comfortable dressing than plaster of Paris. The wood-fiber splint is applicable to every portion of the body, it is porous, clean, does not irritate the skin, and requires no padding.

Dr. Fowler, the chairman of the committee appointed on the previous day to consider Dr. Senn's offer of a gold medal for the best essay on any surgical subject, presented at the annual meetings, reported as follows:

(1) That a gold medal of suitable design be awarded annually for the best essay before the Section on Surgery and Anatomy each year. (2) The medal to be known as the "Nicholas Senn Prize Medal." (3) The composition must be completed and forwarded to the committee appointed by the Chairman of the Section at the last meeting, at least three months before the date upon which it is to be presented. (4) Each essay is to be signed by a motto, or devise, and shall be accompanied by a sealed envelope bearing the same motto, or design, and containing the name and the address of the author. (5) The envelope shall no be opened until after the paper has been read before the Association when the name of the author will be announced. (6) Essays shall be presented in competition for this prize but once. (7) The successful essay to become the property of the Association. (8) The successful competitor shall be known as the "Nicholas Senn Gold Medal Essayist." (9) The competition shall be announced in at least four issues of the journal of the Association. (10) Not more than two papers shall be given the award of honorable mention in any one year. These papers also become the property of the Association. (11) The medal shall be conferred at the general meeting. (12) The competition for this prize is open only to those who are members of the Association at the time the essay is offered.

Section on Obstetrics and Gynecology.

Second Day—June 2d.

(Continued from page 756.)

Dr. Thos. H. Manley of New York read in abstract a paper on

RENAL SUPPURATION, CATARRHAL, SPECIFIC, AND TRAUMATIC, AND THE VALUE OF MICRO-URINALYSIS OF THE URINARY SEDIMENT AS AN AID TO DEFINITE DIAGNOSIS.

He described his paper as a few notes on a class of lesions which, until comparatively recently, has been practically unstudied, and which as yet are not properly interpreted. "Surgical Kidney" is a designation which carries with it a very pernicious significance, since it always implies the necessity for a surgical procedure. With but few exceptions, renal suppuration begins in one kidney, right or left. Tuberculosis of the kidney, according to some authorities, is never primarily bilateral. He possesses statistics bearing on the frequency of these lesions of the kidney, the classification of suppurative renal lesions, the course they pursue, the diagnosis and treatment. It is now very generally conceded that renal suppuration depends often upon an alkaline fermentation of the urine. Delafield believes that pyelonephrosis commonly involves both kidneys, and that such patients invariably die. Others do not admit this. Some say that if it is a bilateral condition it is much more on one side than on the other. Manley believes that renal suppuration is much more common than is generally supposed. In many cases of so-called lumbago or nephralgia the true condition is one of suppuration. The most common cause of abscess of the kidney is trauma from the presence of a calculus. A morphologic and bacteriologic examination of the urine constitutes a valuable means of study of this condition. While not always able to settle upon the precise site of the disease, we can, by these means, do so in a large number of cases. Masses of micrococci grouped together in the urine indicate septic infection of the kidneys. The presence of pus in the urine in considerable quantity is always an index of serious trouble at some point in the urinary tract. He has had but one case during the past year in which, by *post-mortem* examination he could verify the diagnosis made during life. He is surprised that the morphology of the urine has not been better studied by physicians. Pyelonephrosis is by no means incurable by proper methods, and surgical treatment is not always required. Do not be content with only a single examination of the urine. The pus varies in amount and in the time of its appearance. The presence of cystitis, and particularly of intermittent cystitis, is suggestive of renal disease. This cystitis is due to a descending infection. The epithelia along the course of the urinary tract must be studied, In women, the urine should always be drawn by a sterilized instrument. In pyelonephrosis the kidney is invariably displaced, and can be mapped out on palpation. He objects emphatically to exploratory incisions; they imply weakness on the part of the surgeon. The surgeon should not operate unless he is prepared to go ahead and complete the operation.

DR. M. ROSENWASSER of Cleveland read a paper on the

TREATMENT OF CIRCUMSCRIBED PELVIC HEMORRHAGE,

in which he distinguished emphatically between free hemorrhage and the so-called conditions of pelvic and abdominal hematocele. He stated that not more than forty per cent. of circumscribed hemorrhages due to extra-uterine pregnancy require operative procedures. In these circumscribed cases he insists upon "vigilant delay," the patient being closely watched in a hospital, and rarely has he been compelled to resort to operative treatment. He concludes that, unless a circumscribed hemorrhage requires immediate operation when first seen, the case can be watched usually with good results. Operation is necessary only for sepsis, recurrent hemorrhage, return of the tumor, non-absorption of the effusion, and pressure upon the viscera. The abdominal section is to be preferred to the vaginal incision.

DR. HOWARD A. KELLY of Baltimore read a paper on

ADVANCES IN THE TREATMENT OF FIBROID UTERI.

He said that the next great wave in gynecology will be conservatism in everything but malignancy, and he is here to-day to recommend the conservative treatment of fibroids. He declares the perfect feasibility of extracting from six to thirty, or more myomata, large or small, from the uterine wall closing the wounds with sutures, and leaving the woman a serviceable uterus. It is far more difficult to take out a tumor than to remove the uterus with the tumor. It is not a routine procedure, as is hysterectomy. The hemorrhage also is more difficult to control. Nevertheless, it is the operation of choice. If the patient is in good general condition and under thirty-seven years of age, myomectomy should be done. He would not do it in women who are run down or older. A slight cut is made into the white tissue of the tumor, which is then dissected out with forceps. The fingers should not be used for this purpose. If the tumor is large, the wound should be closed *pari passu* with the removal of the growth. He has cut loose the bladder to remove subvesical tumors of the uterus. A buried catgut suture should be applied so as to leave no dead spaces, and the angles of the wound especially must be closed to prevent bleeding. The tissues should not be handled; this will avoid sepsis. The assistants should use rubber or lisle-thread gloves. He has made as many as seven or nine incisions into the uterus. As a rule the uterine cavity is not opened, although in some cases it is. This, however, is not a serious complication. In one case the entire anterior wall of the uterus was removed; the cavity was closed, however, and the patient has since menstruated normally. All the cases have done well. This conservative operative measure means much to the patient, possibly motherhood.

DR. HENRY O. MARCY of Boston read a paper, entitled

THE CLOSURE OF WOUNDS OF THE BLADDER BY THE USE OF THE BURIED TENDON SUTURE, WITH SPECIAL REFERENCE TO A NEW METHOD FOR THE CURE OF DIFFICULT CASES OF VESICOVAGINAL FISTULA.

He inserts the sutures by means of a fine needle, which penetrates the intestine or bladder to, but not through, the mucous coat. The included structures are held together in a double loop from side to side. The submucous insertion buries the suture in vital tissue, and the mucosa is inverted into the bowel or bladder. No undue force is used in tightening the sutures. An external line of intraperitoneal sutures folds the peritoneum so as to enclose the sutures. As regards fistulæ, the action of the muscular fibers in the vaginal wall prevent the union of the fistular edges. He would, therefore, freely dissect the muscle loose and then close by means of buried sutures in the manner already given. He would use a single tendon suture with a Hagedorn needle making a lacing stitch, whereby the sides of the wound are approximated. The bladder mucosa is thus inverted. Rectovaginal fistulæ are operated upon by the same method. The rectum is first dissected freely from the vagina and the two closed separately. We are indebted to Kelly for the revival of the suggestion of catheterizing the ureters preliminary to the closing of large vericovaginal fistulæ. Marcy especially lays stress on the lateral approximation of the tissues of the median line.

DR. C. S. BACON of Chicago read a paper on

THE MIDWIFE QUESTION IN AMERICA,

in which he said that in Germany the question of the improvement of midwifes has recently attracted much attention, as also in England and France. In this country the State boards and the boards of health have made some efforts in this direction. He would not abolish midwives, but would regulate their education and registration. There are almost 900 midwives in Chicago, who attend 25,000 births in a year. A prevalent idea is that midwives educated in Europe are better than those educated here. Ilinois and Missouri require a course of five-months' training in obstetrics before a certificate can be issued. An efficient system of midwife control and regulation is essential; otherwise the midwives degenerate. The mortality rate from puerperal sepsis has decreased in the hands of midwives, but is still very high. No midwife can manage properly complicated cases, but they can attend normal labors. The practice of abortion has become a serious question, and it is due largely to improper supervision of midwives. He believes that midwives are needed. The State boards and the boards of health should take in hand the regulation of these women. A ten-months' course should be given in a midwife school in connection with a regular school of medicine.

SECTION ON DISEASES OF CHILDREN.

THIRD DAY—JUNE 3D.

(Continued from page 771.)

Dr. **Bedford Brown** of Alexandria, Va., read a paper, entitled

NEW METHODS OF RESUSCITATING STILL-BORN AND FEEBLE-BORN CHILDREN,

in which he recommended hypodermic injections of four or five drops of whisky and one drop of tincture of belladonna, in each arm, and hot water rectal injections. Hot water, hypodermically, was advised in cases of marked cyanosis.

THE TREATMENT OF HERNIA IN INFANCY AND CHILDHOOD

was the subject of a paper read by Dr. **Wm. B. Coley** of New York. He said that the treatment of the inguinal form of hernia in infants should be begun at once upon the discovery of the condition by the application of a truss. The steel truss is more satisfactory than a pad and bandage, and it should be worn day and night for at least two or three years. Operation is not advisable before the fourth year.

Dr. **A. Ernest Gallant** of New York read a paper, entitled

VAN ARSDALE'S TRIANGULAR SPLINT IN FRACTURES OF THE SHAFT OF THE FEMUR IN INFANTS AND YOUNG CHILDREN,

in which he recorded his own observations and gave an exhaustive review of the literature on the subject. An interesting demonstration was also made of the application of the triangular splint. The requisites for an efficient splint in fractures of the femur in young children, as mentioned by most writers, are rest, an apparatus which does not hurt, or become wet and soiled or need frequent readjustment, and to this the writer adds that the child must be moved about or, if old enough, allowed to move about itself. The triangular splint is made of thick cardboard, and is adjusted in the following way: The length of the uninjured thigh from the middle of the groin to the end of the femur is measured, and a figure is outlined upon the cardboard resembling two spades, as shown on playing-cards, united at the points, the length of each of the four sections being equal to that of the child's thigh, the widest portion equaling about two-thirds of the circumference of the thigh. This figure is then cut out with a knife. The cardboard is moistened on one side and folded so as to form a triangle of about 60 degrees, and fastened in that position by means of adhesive plaster. The abdomen and thigh are then covered with cotton which is held in place by a gauze bandage. The splint is adjusted by placing the triangle in the angle formed by flexing the thigh, allowing one flanged portion to embrace the thigh while the other rests upon the abdomen. It is secured in place by means of a muslin bandage which is carried through the splint, around the body and around the thigh. The hips and thigh are then encircled with starch or crinolin bandages. The leg must be bandaged from the toes to the knee to prevent swelling. The splint may be removed at the end of the third week. Friction should then be employed to restore muscular tone, the strokes always being toward the trunk.

Dr. **James P. Fiske** of New York read a paper, entitled

THE APPLICATION OF THE AMBULANT METHOD TO FRACTURES OF THE LEG IN CHILDREN.

The ambulant plaster cast is applied as follows: After reduction of any deformity the limb is held by an assistant, the foot being flexed to a right angle, and the foot and leg are bandaged with a muslin roller from the toe tips up to and surrounding the tuberosity of the tibia. This bandage, as well as the cast, may extend in children well up on the thigh, as the effectiveness of the cast as a walking splint depends largely upon how firmly it grasps and supports the enlarged upper end of the tibia. Over the muslin roller the plaster bandages are applied in the usual manner, being thicker about the ankle and also at the superior circumference of the splint where in walking it largely supports the weight of the body. No padding is used, the splint exerting equal pressure at all points. A considerable experience in the use of plaster dressing is requisite to have the cast applied in an efficient manner. It has been thought that as the tuberosity of the tibia is not developed at this age to the extent that it is in adult life the ambulant cast is not applicable to children. This view is entirely erroneous, as it may be applied at all ages and in various conditions, not only in fracture of the leg but in tuberculous disease of the ankle-joint, including resection of the ankle-joint, and also in osteotomy cases involving both tibia and fibula.

Dr. **Thos. Chas. Martin** of Cleveland, O., read a paper, entitled

DIFFICULT DEFECATION IN INFANTS.

Straining at stool is explained because of imperfect development of the anatomic structures concerned in the mechanism of expulsion, which are the following: (1) The infant's lower gut is muscularly deficient. (2) Its mobility within the abdomen is obstructive to defecation. (3) The semilunar valves of the rectum are obstructive. (4) The infant's anus not being sufficiently expansible is also obstructive. The wall of the infant rectum and sigmoid flexure is thin as compared with that of an adult. It is impossible to distinguish the longitudinal muscular bands which are so apparent in the gut of the adult.

The relations of the peritoneum to the rectum in the infant contributes to the difficulties of defecation; also, the relatively great length of the descending colon. The mesentery of the sigmoid flexure and rectum is disadvantageously long. The pelvic outlet in the infant is so contracted that the limits of anal expansion are such as to almost defeat the passage through it of other than fluid feces. The average transverse diameter of the newly born infant's pelvic outlet is but a little more than half an inch.

The paper by Dr. E. Stuver of Rawlins, Wyoming, entitled

THE INFLUENCE OF OUR PRESENT SCHOOL SYSTEM ON THE HEALTH AND DEVELOPMENT OF THE CHILD

was read by the secretary in the absence of the author.

The paper, entitled

INFANTILE CONSTIPATION,

by Dr. J. W. Byers of Charlotte, N. C., was read by title.

Dr. Louis F. Bishop of New York City read a paper on

THE EARLY RECOGNITION AND TREATMENT OF DEFECTIVE DEVELOPMENT OF CHILDREN.

Dr. Jas. J. Concannon of New York City read a paper, entitled

ABNORMAL RESPIRATION IN INFANTS FROM OBSTRUCTION IN THE UPPER AIR PASSAGES.

Fourth Day—June 4th.

Dr. I. N. Love of St. Louis addressed the Section with a plea to organize a National Pediatric Society, with the object of disseminating a knowledge of diseases of children, making it distinctly a national organization, its members consisting of teachers and instructors in pediatrics. Upon motion of Dr. Henry E. Tuley the consideration of this subject was indefinitely postponed.

Dr. J. W. Byers of Charlotte, N. C., read a paper, entitled

INFANTILE CONSTIPATION.

The form described was the habitual constipation associated with, or ascribable to, defective conditions connected with the digestion and assimilation of certain elements in the food.

Dr. Harriet E. Garrison of Dixon, Ill., read a paper, entitled

THE BELLADONNA TREATMENT OF PERTUSSIS.

She reported several interesting cases, the method of treatment being one-half-drop doses of tincture of belladonna repeated every hour, unless marked dilatation of the pupils was produced. In other cases granules of atropin sulphate, grain $\frac{1}{250}$, was administered at bedtime, with bromid of sodium. In one case in which there was a hysteric element, the sodium was replaced by asafetida. The conclusions reached were that belladonna *per se* will relieve pertussis, and that a neurotic element is often present when there is a severe cough afterward. The younger the child the better the belladonna acts in relieving pertussis. It takes proportionately a larger dose to produce toxic symptoms in a child than in an adult.

Dr. Jos. Wm. Stickler of Orange, N. J., read a paper, entitled

THE MANAGEMENT OF CHILDREN WITH INHERITED TUBERCULOUS DIATHESIS.

Dr. Jas. C. Johnston of New York read a paper upon

SKIN GRANULOMATA IN CHILDREN: THE TUBERCULOSES.

Dr. Mary E. Baldwin of Newport, R. I., read a paper, entitled

THE CARE OF THE BABY'S EYES IN THE PERAMBULATOR.

Dr. H. H. P. Leuf of Philadelphia read a paper, entitled

A PLEA FOR A MORE COMMON-SENSE TREATMENT OF SICK CHILDREN,

after which the section adjourned.

Section on Materia Medica, Pharmacy, and Therapeutics.

Second Day—June 2d.

(Continued from page 759.)

Dr. N. S. Davis of Chicago read a paper on

THE THERAPEUTIC PROPERTIES OF ALCOHOL AND THE REASONS WHY THE FERMENTED AND DISTILLED LIQUORS USED AS BEVERAGES SHOULD NOT BE RECOGNIZED IN THE PHARMACOPEIA AS MEDICINAL AGENTS.

He first laid down the broad proposition that pure ethyl-alcohol is an active poison, and reviewed its physiologic effects upon the tissues and organs of the body. He claimed that the supposed tonic and restorative effects are based solely upon the sensations and movements of the patients, but when the improvements of analytic chemistry were brought to aid the elucidation of the problem, it was found that alcohol retards the natural metabolic changes, lessens the processes of oxidation and elimination, diminishes nerve sensibility, and when repeated from day to day induces cell and tissue degeneration. It also affects the action of the cells of the brain and reduces intellectual force and mental restraint. The various alcoholic beverages all owe their activity to ethyl-alcohol, any addition being either harmful or for mere flavoring purposes. Brandy, whisky, and wines are prescribed for their alcoholic constituent, which, however, varies very greatly. In no other powerful agent used in medicine would such indifference be shown to the variation in strength of the active ingredient. He therefore advocated the dismissal from the Pharmacopeia of all this class of agents, and substituting dilute alcohol in their place. It would be a long and very important step in advance both in the interests of scientific accuracy and of humanity, if all physicians, when they think alcohol is needed, would prescribe it in the manner just indicated. In the next revision of the Pharmacopeia if only alcohol of standard strength should be retained, to the exclusion of all fermented and distilled liquors, and if these changes were adopted and carried into general practice, the result would be a more complete separation of both pharmacists and physicians from connection with and responsibility for, the general traffic in and uses of the various alcoholic liquors now in popular demand.

The discussion was carried on by Dr. Remington of Philadelphia, Mr. Thompson of Washington, Drs. Shoemaker of Philadelphia and Eccles of Brooklyn, Fite of

New York, King of Pittsburg, F. E. Stewart, and Davis, the general tone being in favor of the position taken by the reader of the paper.

Dr. Stewart, chairman of the delegates from the American Pharmaceutical Association, offered the following resolution on behalf of the delegation:

Whereas, As the medicinal properties of spiritus frumenti and spiritus vini gallici are due solely to the alcohol they contain, and alcoholic stimulation can be better achieved by the use of pure alcohol, properly diluted, and with less danger of the patient acquiring an alcoholic appetite than by administering either of the above-named beverages, it is therefore

Resolved, That the Section on Materia Medica, Pharmacy, and Therapeutics of the American Medical Association recommends that spiritus frumenti and spiritus vini gallici be dropped from the United States Pharmacopeia in its next revision. This was unanimously adopted, and referred to the Executive Committee.

Dr. F. E. Stewart of Detroit read a paper, entitled

IS IT ETHICAL FOR MEDICAL MEN TO PATENT MEDICAL INVENTIONS?

The author reviewed the question of the origin of patent rights and the present practice with regard to patents, which restrict the use of any patented article, and concluded that it was not ethical for a physician, whether belonging to the Association or not, to own a patent on medical inventions. He also incidentally discussed so-called patent or proprietary medicines, and insisted that if the laws now in force were obeyed, traffic in this class of merchandise would cease entirely.

Dr. William Trelease of St. Louis read a paper on

MEDICAL BOTANY.

In this communication the author spoke of the value of well-arranged botanic gardens for the purpose of teaching medical botany. He also spoke of the great value of a text-book, which would enable the student to identify trees and plants at other times than when in flower.

The following officers were elected for the following year: Chairman, Dr. John V. Shoemaker of Philadelphia; Secretary, Dr. C. C. Fite of New York. Executive Committee: Drs. Frank Woodbury of Philadelphia, F. E. Stewart of Detroit, and Warren B. Hill of Milwaukee.

Third Day—June 3d.

The Section met at the College of Pharmacy by invitation of the Trustees. The first report of the Committee on Joint Investigation with the American Pharmaceutical Association was read.

Dr. R. W. Wilcox of New York read a paper, entitled

THE PHYSIOLOGIC AND THERAPEUTIC ACTION; A CLINICAL STUDY OF STROPHANTHUS.

The communication was the second on the subject, the first having appeared in *The American Journal of the Medical Sciences* for May, 1897. Success in the administration of strophanthus requires: (1) an active, well-made preparation from a reliable source; (2) avoidance of its use in the case of fully or over-compensated hearts, in those which present advanced muscular degeneration, or mechanical defects of high degree; (3) the use of not too large or too frequently repeated doses. A dose of five drops of this preparation, three or four times a day, is sufficient. In a study of twelve cases, which was the basis of the paper, the author made use of a tincture of strophanthus kombé (variety *pubescens*) made by Parke, Davis & Co., according to the terms of the United States Pharmacopeia, and standardized by physiologic methods. A study of the effects upon the circulation shows that the line of ascent, in the pulse tracing with Dudgeon's sphygmograph, becomes longer and more perpendicular, the distance between the successive apices longer, the decrotic wave disappearing, and the irregularities being almost always overcome. In other words, the heart-beat becomes stronger, its rate slower, and rhythm more regular. This change took place without any change in blood tension other than could be justly attributed to a more powerfully and evenly acting heart. A number of tracings were shown indicating increased power in the heart. There was no effect upon the blood-vessels, strophanthus being a pure heart tonic. Experiments made with fluid extracts from different varieties showed that they varied in their physiologic effects, and in most instances caused gastric disturbance which did not follow the use of a good tincture, or of the strophanthin itself in tablets (gr. $\frac{1}{250}$) for hypodermic use.

The advantages of approved preparations of strophanthus over digitalis are: (1) greater rapidity of action, (2) absence of so-called cumulative effects, (3) non-interference with the caliber of the arteries. In conclusion, he called attention to the marked safety of strophanthus as a heart tonic for the aged, the nephritic, the gouty, and the atheromatous. It is the best cardiac remedy for children.

Dr. E. M. Houghton of Detroit read a paper, entitled

THE PHARMACOLOGY OF STROPHANTHUS.

The active principle of strophanthus is contained in variable quantities in different species and different samples. One specimen was found to be one-hundred times as strong as another which was claimed to be a chemically pure article. Strophanthin in a nerve and muscle poison, primarily. In therapeutic doses, it slows the pulse, lengthens the cardiac systole and diastole, increases blood pressure, and the efficiency of the cardiac muscle. In toxic doses, it produces rapid paralysis of the heart. When brought in contact with the conjunctiva, strophanthin exerts a local anesthetic influence ten times as great as cocain, but its use is liable to be followed by inflammation or even ulceration. It causes slight lowering of the temperature in normal animals. It is a cerebral sedative, and sleep is one of the most constant symptoms in dogs, rabbits, and guinea-pigs under full doses of the drug. Strophanthus produces much less disturbance of the stomach than does digitalis, acting locally as a stimulant or irritant to the gastro-intestinal mucous membrane. Like digitalis, it stops the heart in systole. The author's experiments on various animals convinced him that no constriction of the vessels is produced by therapeutic doses of strophanthus. The increased blood pressure must be due mainly to direct action upon the heart or upon the nervous mechanism controlling the heart. The pulse is made slower and more full and regular; there is no constriction of the arterioles or any especial action upon the vasomotor mechanism, the diuresis and other important results being due mainly to improved circulation. Its special advantage over digitalis consists in the facts that it does not produce gastric disturbance; it does not show cumulative action; it acts more quickly and with greater certainty, and owing to its ready solubility it is better for hypodermic administration, and the strength of its preparations are more easily standardized. As regards the ordinary dose, three to five drops of a five-per-cent. tincture or 1-200 of a grain of strophanthin according to the author.

DR. FRANK WOODBURY read a paper, entitled

A NOTE ON TWO NEW CREOSOTE COMPOUNDS—CREOSOTE VALERIANATE AND GUAIACOL VALERIANATE.

He said that, owing to the fact that commercial creosote is frequently adulterated with coal-tar products, and that, when pure, it contains a variable quantity of guaiacol (sixty to eighty per cent.), efforts had been made to find a substitute. Pure guaiacol is crystalline, but that which is sold under this name is a fluid of pungent, smoky odor, and not well adapted for internal use. Locally, in five-per-cent. solution in sweet oil, as reported by Dr. Newcomb of New York at the recent meeting of the American Laryngological Association, strophanthus acts as an anesthetic when locally applied to the mucous membrane of the nose, and, being free from after effects, is a good substitute for cocain. The reporter had used guaiacol valerianate, applied pure or diluted, and had found it to exert decided analgesic effects. If taken internally, both guaiacol valerianate and creasote valerianate are powerful antiseptics. Being excreted by the bronchial mucous membrane, they exert a local astringent and antiseptic action reducing bronchorrhea. In the stomach these agents are usually well borne and act as antiferments. The combined sedative and antiseptic effects of local applications are best seen in the nasal chambers, in cases of bacterial infection. In purulent rhinitis, for instance, and in some cases of atrophic rhinitis these applications, after thorough cleansing of the nose, yield very good results. Gastric catarrh is benefited by reduction of fermentation, and also by a local tonic action upon the mucous membrane. In early phthisis, the results have been found very good by Dr. Rieck—the appetite and digestive functions are stimulated, there is diminution of expectoration and of cough, the night sweats disappear, the patients improve in weight.

DR. J. C. HENEMETER of Baltimore read a paper, entitled

THE EXPERIMENTAL BASIS OF THE DIETETIC AND MEDICINAL TREATMENT OF HYPERACIDITY AND GASTRITIS.

A very interesting physiologic description of the minute anatomy of the gastric mucosa and the functions of the oxyntic and parietal or central cells was given. He had found that gastric hyperacidity is due to proliferation of oxyntic cells, which are then thrown off and are to be found in the washings from the stomach. He had found the administration of decided doses of alkalies and the aid to digestion of starchy food offered by the use of taka-diastase to permanently relieve this condition.

The Chairman of the Delegation from the American Pharmaceutical Association read certain questions upon which the opinion of the Section was desired. These are the dismissal from the United States Pharmacopeia of spiritus frumenti, spiritus vini gallici, vinum album and vinum rubrum. Replacement of official wines by vinegars. Dismissal of all tinctures having a fluid extract of the same drug official. Substitution for such tinctures and fluid extracts, a fifty-per-cent. tincture under a distinctive title. Change of formula for Dover's powder back to that of the 1890 United States Pharmacopeia, by using potassium sulphate in place of sugar of milk.

After free discussion, in which Dr. Remington, Mr. Kebler, Dr. Stewart, and others participated, it was decided to approve the change of formula for Dover's powder to the old form previous to 1890, which used potassium sulphate instead of sugar of milk.

FOURTH DAY—JUNE 4TH.

DR. G. V. I. BROWN of Duluth, Minn., read a paper, entitled

PRACTICAL DIFFICULTIES OF PSYCHO-THERAPEUTICS.

One of the principal difficulties is the mental instability of many neurotic or degenerate subjects, and their unwillingness to yield to the hypnotic state.

DR. GEO. W. COX of Chicago read a paper on

STREPTOCOCCIC INFECTION AND MARMOREK'S SERUM,

in which very successful results in cases of suppuration and of erysipelas and puerperal septicemia were obtained by the early use of the serum. Marmorck's serum is always used by hyperdemic injection. In all grave cases, such a puerperal septicemia, and especially if treatment has been considerably delayed, an initial dose of 30 cc. is advised. This may be followed by doses of 10 cc. or 20 cc. every twelve or twenty-four hours, according to symptoms. In ordinary cases of erysipelas the initial dose is 20 cc., and in many instances this is all that may be required. The serum is only applicable to the streptococcic infection, and it therefore follows that early bacteriologic examinations should be made.

DR. DELANO AMES of Baltimore read a very elaborate paper on

THE NATURE OF THE LEUCOCYTOSIS PRODUCED BY NUCLEINIC ACID; A PRELIMINARY EXPERIMENTAL STUDY.

He first briefly referred to the introduction of nuclein as a therapeutic agent, pointing out the fact that its use was based upon its property of increasing the germicidal action of the blood. That the blood possessed definite germicidal power was first pointed out by Nuttall working under Flügge. But to what this power was to be attributed was not definitely known until Vaughan of the University of Michigan, succeeded in isolating from the blood a nuclein which he and others demonstrated to possess definite bactericidal properties.

One of the constant effects of the use of nuclein is the production of an apparent leucocytosis. The most important part of Dr. Ames' paper dealt with the discussion of the nature of leucocytosis. Certain writers have claimed that nuclein and substances acting as it does do not have the power to increase the total number of white blood-corpuscles, but that they so affect the circulation as to cause a determination of the cells to the peripheral vessels. This statement, however, seems to be at variance with the findings of many other observers who have proved definitely that by the use of nuclein the germicidal power of the blood of animals could be very materially heightened. Since the germicidal power of the blood resides in its nuclein and since this substance is produced by the white blood-corpuscles it is difficult to understand how a simple rearrangement of the cells in the circulation could in any way increase the amount of nuclein formed. *A priori* reasoning would lead one to believe rather that by the use of nuclein or allied substances the total number of white blood-corpuscles is increased. Dr. Ames' paper was based upon a series of experiments which were made during the past winter by himself and his assistant, Dr. A. A. Huntley of Baltimore, to determine, if possible, what was the exact effect of nuclein upon the blood. Briefly his results may be summed up as follows:

1. Before the administration of nuclein the counts of the leucocytes showed that the number present in both the peripheral and central circulations was practically the same.

2. That following the administration of hypodermic injections of nuclein solution there was immediately, that is, by the end of five or ten minutes, a very noticeable increase in the total number of leucocytes *in both the peripheral and central circulations.*

3. That at this time the percentage increase was most marked in the young mononuclear forms which, in some instances, rose as high as sixty per cent. of the whole within fifteen minutes, while at the same time the proportion of polymorphonuclear elements was proportionally low.

4. That the longer after the injection of nuclein the greater was the actual increase in the total number of corpuscles per cubic millimeter, and this number seemed to rise steadily *in both the peripheral and central circulations.*

Section on Neurology and Medical Jurisprudence.

Second Day—June 2d.

(Continued from page 759.)

The first paper was by Dr. C. C. Hersman of Pittsburg on

THE MEDICO-LEGAL ASPECT OF CHOREIC INSANITIES.

He related the case of a young girl, just past puberty, of neurotic family and personal history, who accused her school-teacher of assault and rape. The girl confessed to having dreamed the night following the alleged attack that the teacher had ravished her mother. The unfortunate teacher was tried and convicted of an assault with intent to ravish. In the reader's opinion, the young girl had had an erotic dream, which on waking remained as a reality. The girl had confessed to some of her friends that it might "have been all in a dream."

INSANITY AND PULMONARY CONSUMPTION AMONG THE NEGRO POPULATION SINCE THE WAR

was the title of the next paper, by Dr. Thomas J. Mays of Philadelphia.

He said that statistics gathered from the superintendents of southern hospitals for the insane show that both insanity and pulmonary consumption have increased disproportionately among the negroes of that section of our country since the close of the civil war. Thus, according to the United States census, there were in 1860 only 44 insane negroes in the State of Georgia; in 1870, there were 129; in 1880, 411; and in 1890, 910. In North Carolina there were in 1880, 91 colored insane; in 1885, 144; in 1890, 244; in 1895, 307, and in 1896, 370. In Virginia before 1865 there were about 60 insane negroes in the asylums of that State, and now there are over 1000. In the Eastern Hospital for the Colored Insane in North Carolina, consumption caused 14 per cent. of the total number of deaths in 1884, while in 1895 it produced 27 per cent. of all the deaths, and this in spite of a reduced general mortality rate. In the Mississippi Lunatic Asylum from 1892 to 1896, consumption caused 42 per cent. of the total number of deaths among the negroes, or an increase of 22 per cent. over the death-rate from this disease among the white population outside of hospitals for the insane (it, of course, being well known that insanity predisposes to phthisis) if the latter is estimated at 20 per cent. In the Alabama Insane Hospital, during three years and nine months beginning October 1, 1890, there occurred 295 deaths among 1700 white and negro patients. Of the 179 deaths among the white patients, 28 per cent. were due to tuberculosis, and of the 116 deaths among the negroes, 42 per cent. were due to the same disease.

From this and other evidence presented, it is concluded that both of these diseases have disproportionately increased since the war, and that in all probability the causes which led to one also led to the other. The speaker held that the predisposing cause of phthisis resides in a disintegrated nervous system, and cited a number of concurrent authorities, as well as clinical and pathologic data, to prove his position; and, among other conclusions, he drew the following: That both consumption and insanity are closely allied, both in personal and in family history, to idiocy, hysteria, epilepsy, and asthma, and to other diseases of the brain and spinal cord; that they are both produced by syphilis, alcohol, overwork, business vicissitudes, domestic trouble, mental anxiety, grief, disappointment, and excesses of all sorts—in fact, by any agent or influence which vitiates the brain or nervous system; and that those who are confronted by a new and higher civilization, and who are compelled to adjust themselves to these new relations, are excessively liable to fall victims to insanity and pulmonary phthisis.

Viewing the condition of the southern negro from these standpoints, it is perfectly obvious why insanity should necessarily develop, and on no other grounds can we explain why consumption should follow in the wake of insanity. Those who are able to realize all the factors which would be called into activity by the environmental change of the negro after the war could, at the time it was made, have foretold the inevitable results which are now but too plain to every one. It is in part a repetition of what happened, and now happens, to the aborigines of North America, Australia, and New Zealand, who in their unequal warfare with modern civilization have been and are being fast decimated and exterminated by pulmonary phthisis.

Dr. T. D. Crothers of Hartford, Conn., read a paper on

INEBRIETY AND TUBERCULOSIS AS ALLIED DISEASES.

He contended that tuberculosis is of neurotic origin, and he was inclined to look upon inebriety in the same light.

Dr. James Hendrie Lloyd of Philadelphia read a communication on

POST-MORTEM FINDINGS IN A CASE OF TRAUMA OF THE CERVICAL REGION OF THE SPINAL CORD SIMULATING SYRINGOMYELIA.

Dr. Wm. G. Spiller of Philadelphia gave further details as to the case, which seemed to leave room for the theory that the fibers for the transmission of the tactile sense are distinct from the fibers for the transmission of the pain or pathic sense.

MENINGOMYELITIS, WITH SPECIAL REFERENCE TO THE TUBERCULOUS FORM.

Dr. Wm. G. Spiller of Philadelphia read this paper, the last of the afternoon, and it was discussed by Drs. James Hendrie Lloyd of Philadelphia, Charles H. Hughes of St. Louis, Hugh T. Patrick, Lichty, Harold N. Moyer of Chicago, and the author.

Third Day—June 3d.

THE PARALYSES, BY ONE OF THE MANY PARALYTICS,

was the heading of an article by Dr. Samuel Knox Crawford of Chicago. Dr. Crawford said that he had suffered a grave lesion of a part of one hemisphere of his central ganglion, and yet was fully conscious of it all, and able to interpret the nerve disturbance and mental perturbation resulting therefrom, and was capable conversely, of locating the lesion from the distal nerve phenomena. He gave his subjective symptoms, prodromal and during the attack.

The next paper was on

NEURASTHENICA ESSENTIALIS AND NEURASTHENIA SYMPTOMATICA,

by Dr. F. X. Dercum of Philadelphia. The author took the position that true neurasthenia is a fatigue neurosis; if the fatigue symptom is not present, neurasthenia is not the proper diagnosis. All the other symptoms of neurasthenia are secondary to this, and may exist in a number of other conditions.

Dr. G. Betton Massey of Philadelphia presented in this connection a communication on

NEURASTHENIA, AN ABDOMINAL NEUROSIS,

advancing the hypothesis that the sympathetic nerve-failure of neurasthenia is due to a retraction of the neuronic processes of certain neurons of the visceral ganglia, thus breaking the circuit of the transmission of secretory energy to the visceral end organs. Auto-intoxication, as explained by Bouchard, seems to furnish an adequate explanation of the mental symptoms of neurasthenia as a simple beclouding of the normal physiologic action of the brain by poisonous elements in the blood.

THE INFLUENCE OF HYPNOTIC SUGGESTION UPON PHYSIOLOGIC PROCESSES,

was the title of a paper read by Dr. R. Osgood Mason of New York. He related a number of very wonderful cures, including relief from constipation, suppressed and difficult menstruation, etc., by hypnotism, and strongly advocated the use of suggestion in proper cases.

Dr. U. O. B. Wingate of Milwaukee, Wis., in a paper on

HYPNOTISM IN THE TREATMENT OF DISEASE,

took a decidedly negative position. He thought that hypnotism should be used guardedly, if at all, and that it will be found that unhappy results follow the frequent hypnotizing of one patient.

THE REST CURE

was the title of the next paper, by Dr. Landon Carter Gray of New York. He thinks that neither electricity nor massage is an essential part of the treatment. He is in the habit of keeping patients in bed not more than two or three weeks, and then gradually allows them to move about. He thinks that there are cases which do not do well under the rest cure, although this discovery of Weir Mitchell's was a wonderful and meritorious one.

REST AND NORTHERN LAKE AIR FOR NEUROTICS,

by Dr. E. S. Pettyjohn, of Alma, Mich., was read by title.

RUMINATION IN MAN

was the title of the next paper, by Dr. Wharton Sinkler of Philadelphia. He gave several instances of this interesting malady.

THE TREATMENT OF GRAVES' DISEASE

was the last subject before the meeting. Dr. Harold N. Moyer of Chicago spoke of the tendency to spontaneous remission in this disease, and the treatment of acute exacerbations by means of strophanthus, also local treatment by an ice-bag over the precordial region, as well as the electric current. The results of his treatment he found were not always satisfactory, in that a permanent cure was difficult, if not impossible.

Dr. Augustus A. Eshner of Philadelphia opened the discussion of the paper. He was followed by Dr. Hughes, who reported better results from treatment, and considered the difficulty due to trouble in the floor of the fourth ventricle associated with the vagus and disordered vasomotor system.

DR. MOYER stated that he had derived benefit from the use of thymus extract.

FOURTH DAY—JUNE 4TH.

DR. CHARLES K. MILLS and DR. MARY ALICE SCHIVELY of Philadelphia presented a paper on

TUMOR OF THE SPINAL MENINGES.

The patient had sweating of one-half of the upper part of the body, radiating pains, and peculiar sensory and motor phenomena. The tumor was found to involve the spinal dura, being situated at about the first or second thoracic vertebra. This tumor had pressed upon the spinal cord, and had pushed the cord in front of it; but the interesting part of the case was that the tumor could have been removed by operation, because most of the spinal cord was intact.

A CLINICAL AND PATHOLOGIC REPORT OF A CASE OF CHRONIC PROGRESSIVE NONSPECIFIC DEMENTIA, WITH ARTERIOSCLEROSIS,

was the title of another paper by DRS. MILLS and SCHIVELY.

TUMORS OF THE CEREBELLUM, WITH A REPORT OF A CASE

by DR. A. O. J. KELLY of Philadelphia was read by title.

DR. JOHN K. MITCHELL of Philadelphia presented an interesting

CONTRIBUTION TO THE PATHOLOGY OF MYELITIS, ACUTE AND CHRONIC,

and DR. JOHN H. W. RHEIN read a paper on

LESIONS OF THE SPINAL CORD DUE TO TUBERCULOUS DISEASE OF THE COLUMN, WITH MICROSCOPIC SPECIMENS.

DR. HUGH T. PATRICK of Chicago referred to the retention of the reflexes in some of these cases. He spoke of a case of Potts' disease in which the knee-jerks were lost and then returned.

DR. HERSMAN of Pittsburg put in a plea for the use of the anatomic designations of the different portions of the system, rather than the names of the discoverer of the part.

DR. DERCUM referred to a case of locomotor ataxia in which the typical condrome was present, the knee-jerks being absent. Apoplexy occurred, with an apparent hemorrhage, and the knee-jerks returned on the paralyzed side.

DR. HUGHES thought it was undoubtedly a fact that the reflexes do disappear and return.

TREMOR IN CHOREA,

was the title of a paper by DR. JOHN H. W. RHEIN.

DR. CHARLES H. HUGHES of St. Louis, the new Chairman, was then conducted to the Chair by Dr. Dercum of Philadelphia, and Dr. Pettyjohn of Alma, Mich. Dr. Herdman, the retiring Chairman, made some appropriate remarks, and Dr. Hughes thanked the Section for honor conferred upon him.

DR. PETTYJOHN then presented resolutions thanking Dr. Charles K. Mills, the Philadelphia Neuralogical Society, and the neurologists of Philadelphia, for their indefatigable efforts to contribute to the success of the meeting and their consideration of the comfort and enjoyment of visiting members.

REVIEWS.

A TREATISE ON SURGERY. By American Authors. Edited by ROSWELL PARK, M.D., Professor of Surgery and Clinical Surgery in the Medical Department of the University of Buffalo. Vol. II., Special Surgery. Philadelphia and New York: Lea Brothers & Co. 1897.

THE reputation already gained for Dr. Park's "Surgery" will certainly not be diminished by the appearance of the second and concluding volume. Success was already assured and this volume will undoubtedly increase the popularity of the work. Volume II. is devoted to "Special and Regional Surgery," and is divided into twenty chapters. It opens with an admirable chapter by the editor on the "Injuries and Diseases of the Head." He describes briefly but well the affections of scalp and bones. In the treatment of head injuries many of the old rules and precautions are wisely ignored, and in their place are substituted practical modern views, as in cases of fracture, "in every case of doubt it will be wise to make exploratory incisions," "whether the fracture be compound or not, calls always for operation," etc. He properly restricts the term concussion to cases of shock following injury, and gives no parallel columns to puzzle the practitioner as to whether the case be one of concussion or compression. He gives a judicial view of the surgical treatment of epilepsy, not too enthusiastic. His memoranda of cranial topography is useful, and the description of operative technic, explicit and correct. His opinions throughout are clearly and decidedly expressed.

Chapter II. treats of "Injuries and Surgical Diseases of the Spine," by E. H. Bradford. The different subjects are well discussed. His position in regard to operations for fractured spine is sufficiently bold, and at the same time conservative. The surgery of the peripheral nervous system is also briefly considered.

In Chapter III. the "Surgical Diseases of the Heart, Pericardium, and large Blood-vessels" are clearly described by Duncan Eve. Twenty-four pages only are devoted to ligation of arteries, an improvement, certainly, on the lengthy descriptions in the older surgeries, but even yet too lengthy.

In Chapter IV. a good account is given by Bryson Delavan of the "Surgical Diseases and Injuries of the Respiratory Organs." Too much space, however, is devoted to minor affections and their treatment, and not enough to the operations which more properly come within the scope of the general surgeons; for example, the external operations for nasal and pharyngeal growths.

Chapter V. treats of the "Surgical Diseases and Injuries of the Face," by Edmond Souchon, and in Chapter V. (continued), the second section, of the neck. The various affections and operations are *clearly* but *briefly* described. The heading "Congenital Malformations" seems to include gunshot wounds, gangrene, etc., etc. In the treatment of deep abscesses of the neck too much importance is given to the so-called "guided dilatation," and too little to a clean and open incision.

Chapter VI. deals with the "Surgery of the Chest," and the author is Frederic S. Dennis. It contains an excellent paragraph on subphrenic abscess. The descriptions of the various surgical affections and operations are clear and concise.

In Chapter VII. "Diseases and Injuries of the Mouth, Tongue, and Jaws" are discussed by Arthur D. Bevan. This is a clear and well-written chapter. In an "Appendix," by T. W. Brophy, on early operation for cleft palate are given plausible reasons for surgical interference in early infancy, and descriptions of rather novel methods.

In Chapter VIII. the "Surgery of the Abdomen" is treated in a masterly way by Maurice H. Richardson, assisted by Farrar Cobb. The chapter contains a great mass of solid information, expressed in a clear and concise manner. His statements are explicit; as, "a gunshot wound of the abdomen, when seen directly after infliction or within an hour or so, demands immediate investigation, whatever the symptoms," etc. His treatment of appendicitis is judicious; "in cases of doubt it is safer to operate than to delay." His description of McBurney's intermuscular operation lacks clearness.

In the next chapter "Hernia" is discussed by the same author. The article is not overburdened with descriptions of useless operations. Bassini's and Halsted's are wisely chosen as the best, and these alone are described. He speaks of the dangers of "taxis," but might have laid more emphasis on this subject.

The next chapter, by Charles B. Kelsey, is an excellent one on the "Rectum and Sigmoid Flexure." There are many instructive illustrations. In discussing fistula, he says: "In these operations it is well to bear in mind that a large percentage of all cases are failures, even in hospital practice," a fact which is certainly true, but is not generally appreciated. He gives a hard blow to the old theory that all strictures which are not malignant must be syphilitic. "There is, I think, no rarer lesion of the rectum than a syphilitic stricture."

Chapter XI. treats of "Genito-Urinary Surgery," and the subject is well handled by Wm. T. Belfield, though, owing to the limited space, it must naturally be too condensed. Consequently internal urethrotomy and some of the surgical kidney diseases are rather slighted.

The next chapter, a brief one, is by the editor on "Chancroid or Venereal Ulcer."

Chapter XIII. is devoted to the "Female Reproductive Organs," and is written by James H. Etheridge. He gives a full and clear description of the various minor diseases and operations, as perineorrhaphy, Alexander's operation, etc. Many excellent plates add to the clearness of his descriptions. The major operations are described with less detail, but with equal clearness.

The "Diseases and Injuries of the Breast," are treated in the next chapter in a most admirable manner by Charles B. Parker.

Chapter XV., on "Amputations," is written by Rudolph Matas. The descriptions of the various methods are clear and sufficiently detailed. To F. Tilden Brown, instead of Dillon Brown, should be given the credit of a most excellent method for hip-joint amputations.

The next chapter, by Robert W. Lovett, deals with "Orthopedic Surgery." It is clearly written, and contains excellent illustrations of deformities and appliances. He considers operations for congenital dislocation of the hip as still *subjudice*.

In the following chapter a graphic account of "Plastic Surgery" is given by Arpad G. Gerster. There are many diagrams which illustrate the various methods better than words.

Chapter XVIII. is devoted to the "Eye and Orbit." It is comprehensive and well written, but it seems unfortunate that part of the forty-eight pages should not have been assigned to some other subject of more importance to the general practitioner and surgeon.

The next chapter is written by Clarence J. Blake on the "Injuries and Diseases of the Ear." It gives a satisfactory account of all that the general surgeon need know on this subject. In describing mastoid operations, several of the lines devoted to the external incision might better have been devoted to indicating the dangers to nerve and sinus which this delicate operation entails.

The volume closes with a brief account of "Skiagraphy," by the editor.

Dr. Park and his associates are certainly to be congratulated on the admirable work which they have given to the profession. For the student, general practitioner, and surgeon this is a most satisfactory "Surgery." In two volumes are condensed as much valuable information as is contained in other treatises of double the size. Obsolete theories and operations are not even mentioned, and the modern scientific spirit pervades every chapter of the book. Its general excellency and consistency is most praiseworthy, considering the large number of authors. It is well written throughout, clear, and condensed. It is comprehensive and yet not too elaborate. It will be an interesting and instructive text-book for the medical student. The practitioner can refer to it and be assured that here he will find the most approved and modern views on all surgical subjects.

The work has rapidly sprung into favor, and it is already deservedly known as our best text-book on surgery.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NORTH CAROLINA. Forty-third Annual Meeting.

BESIDES the address of the president, Dr. R. L. Payne, this volume contains a number of readable and valuable articles. Among them may be mentioned "Management and Treatment of Tuberculosis in the Asheville Climate," by Dr. J. A. Burroughs;" "Something of Surgical Tuberculosis," by Dr. J. L. Nicholson; "Serum Therapy," by Dr. W. O. Spencer, and "Is there in North Carolina a Continued Fever which is Neither Typhoid nor Malarial?" by Dr. H. A. Royster.

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ORIGINAL ARTICLES.

ERYTHROMELALGIA ASSOCIATED WITH RAYNAUD'S DISEASE.

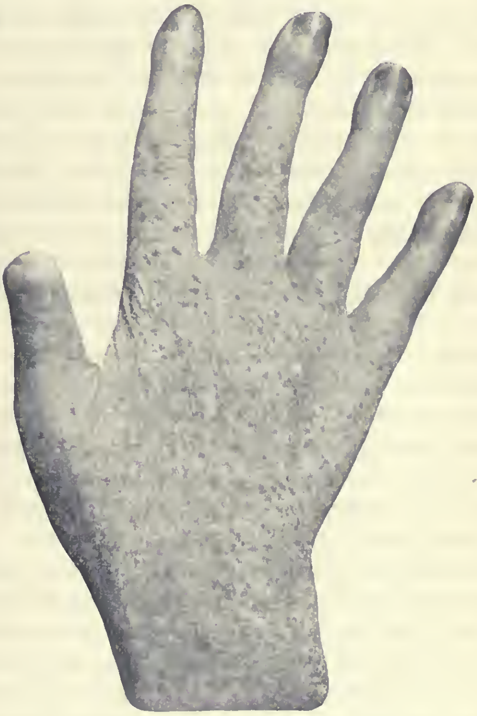
BY HENRY L. ELSNER, M.D.,
OF SYRACUSE, N. Y.;
PROFESSOR OF THE SCIENCE AND ART OF MEDICINE AND OF CLINICAL MEDICINE, SYRACUSE MEDICAL COLLEGE.

ON the 28th of October, 1895, I was called in consultation with Dr. Monroe to see Mrs. H., aged thirty-eight, the wife of a coachman, living in a poorly ventilated house with unfavorable surroundings. The patient's family history presented nothing noteworthy. Her parents were dead, but had reached old age; her brothers and sisters were living and well. She had given birth to three children, and had had one miscarriage. Two of the children are living and enjoying good health. One daughter died at the age of thirteen years of diabetes. The patient had always been a hard-working woman, having done all her own work, including large washings during the summer and winter months. During the winter, she suffered greatly from exposure, due to her impoverished circumstances and environment.

Until February, 1893, she had enjoyed perfect health. She denied specific disease. Her usual weight was over two hundred pounds. She had already lost considerable flesh when I was called to see her. Menstruation was established at thirteen. It had never been markedly abnornal, but of late had been somewhat scanty. She had never suffered from disease of the nervous system, and was not considered neurotic or hysteric by her attending physician, who had seen her at short intervals during the preceding month. Her present illness dates back to the winter of 1893, when she commenced to suffer from severe headaches, mainly frontal, though at times occipital, which were almost always associated with a sense of fulness in the head, and with more or less flushing of the face. It was for the relief of this symptom, which had become alarming and painful, that I was called to see her. In connection with the headaches, she occasionally had been annoyed, during the extreme hot and cold weather of 1894–5, by a burning sensation in the palms and backs of both hands.

The volar surfaces of the fingers of the right hand were most painful from the beginning, and at this time, as well as during the subsequent course of the disease, became the seat of the most intense suffering and greatest pathologic change. During the early months of the disease, and until February 5, 1896, when I was again called to attend her, the pains were paroxysmal, and were always associated with a maculo-papular erythema of an evanescent character, which disappeared with the burning and with the pain. These eruptions were accompanied finally by the severe headaches already mentioned, until the middle of February, when the latter ceased, and have never recurred. Early during February, the left hand showed a few spots of erythema, and was painful to pressure only, while the right hand, by the end of February, was studded with characteristic shot-like papules of erythema over the palm at numerous points, some reaching above the wrist. These papules were exquisitely tender, and were associated with continuous burning, stinging, and throbbing, making it impossible for the woman to use her hand, to bear anything upon it, or to move it without suffering untold agony. There were no symptoms referable to the left hand after March, 1896. After

FIG. 1.



Right hand, showing persistent papular eruption.

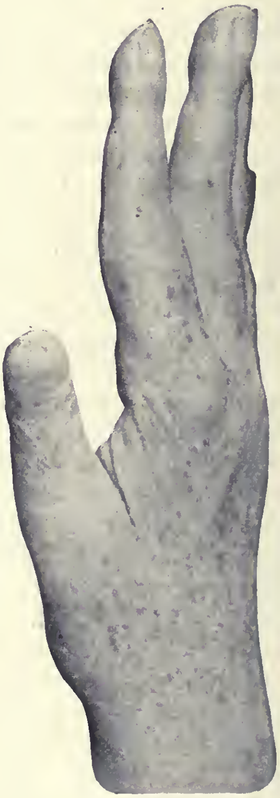
this date the erythema and pain became continuous in the right hand.

Now commenced a period of torture and continued suffering which has never been equalled by any experience which I have had with peripheral pain. The words of Musser are true, when, in speaking of the condition present in this disease, he says: "I know of no peripheral pain which is the cause of greater agony." Erythematous spots were continually present, sometimes as many as eight or ten on each finger, with a reddened area surrounding the nails. These papules during the acute exacerbation were tense, shining, and so exquisitely tender that the hand could not be rested even on a soft pillow, but was constantly held quiet, while firm pressure was made with the left hand above the wrist to prevent sudden movements and jerkings of the fingers during the paroxysm of darting pains and transmission of movement from the body. The patient was unable to sleep or eat more than was sufficient to keep her from starvation.

Bemoaning her fate with tears in her eyes, she came to me frequently begging for relief, and in her agony suggested her willingness to have the hand amputated rather than continue in her misery. She could explain her sufferings only by repeating day after day that "she felt as if her hand was being consumed by a living fire, and that hundreds of pins were being pricked into each tender spot." At times there were sudden darting or shooting pains into the fingers to the tips. The hand, wherever the spots were present, both on the palmar and dorsal surface, was covered with thousands of sweat drops during the more severe pains, and after prolonged pain the epidermis was sometimes loosened. At times the smaller papules were found in clusters, and occasionally became confluent to form the larger and more tense patches which, as they disappeared, left no vestige of their original seat save for about twenty-four hours, when a small nodule could be felt under the skin, less tender than during its blushing period. Never was there evidence of hemorrhage in purpuric spots, or of ultimate ecchymosis. As already stated, at this period the hand was never without some papules, and the lesions about the finger tips were continuous, their brightness and tension varying, being most intense and severe during the frequent acute exacerbations of her subjective symptoms.

From March, 1896, until about the fifth of September, there was no material change in the condition of the patient. All movement of the right hand and arm was limited owing to the persistence of her symptoms, and a moderate atrophy of tissue resulted. In the fingers there were trophic changes; they seemed elongated and spindle-shaped, and somewhat stiff. The radial pulse was the same at both wrists. An examination showed the right hand to be hypersensitive (hyperalgesic). Touching any erythematous patch with the estheiometer caused pain to continue for some minutes after contact. Tactile sense was somewhat tardy, but not materially changed. There were no changes in cutaneous sensibility in the normal skin of the diseased hand, nor in that of other parts of the body. Reactions to both the faradic and constant current were normal in all the hand and arm muscles. There was absolutely no reaction of degeneration in the smaller muscles of the hand.

Fig. 2.



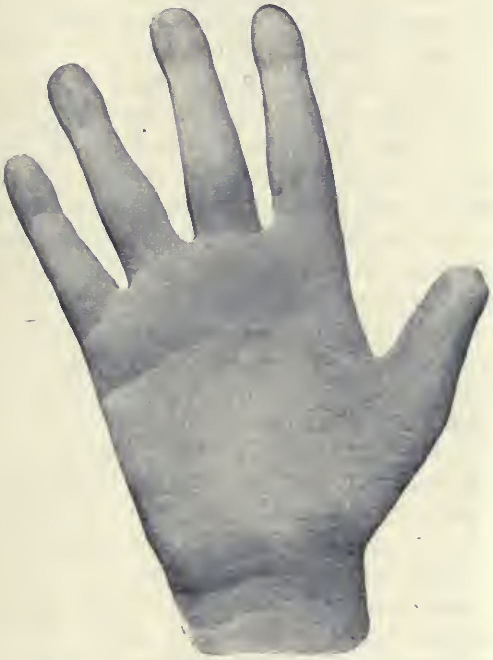
Profile view of right hand, showing position of fingers.

It was discovered that for years the patient had suffered from cystocele, uterine prolapse, and rectocele, which conditions were associated with a urine of normal specific gravity containing a trace of albumin, bladder epithelium, bacteria, and pus. This in all probability was aggravated by the constant pressure of residual urine due to the bladder prolapse.

During all these months treatment availed but little. The writer went through the grand galaxy of remedies usually recommended for the relief of peripheral pain, with indifferent results. The iodids and mercurials were given a fair trial and were found insufficient to control the disease. Electricity even in small dosage increased the pain. Opium and morphin were never given, as the diagnosis presupposed an unfavorable prognosis; chronicity was expected and I feared the formation of the opium habit. Occasionlly it was imagined that salipyrin, antipyrin, and acetanilid, caused slight relief.

One of the most interesting of the many phenomena which I noticed in this case occurred on September 12, 1896. The patient came to my office for the purpose of having another drawing made. The hand, with the exception of the thumb, presented about the usual appearance and was equally troublesome. It was noticed that the thumb was more deeply colored than usual below the terminal phalanx, while the tip was a brighter red than ever before. The deep congestion suddenly faded, the entire finger assuming its former color. This evanescence was sudden and decided.

Fig. 3.



Palmar surface of the hand, showing the smooth stump after complete amputation of the thumb by dry gangrene. Different views of the stump are given in Figs. 1 and 2.

During August it was noticed that there were several erythematous spots, varying in size from a pinhead to a split pea, on the left cheek, and one large papule on the left tragus. While these were less sensitive than those on the hand, their advent was associated with considerable suffering along the branches of the infra-orbital nerve, and persisting, they become more and more tender to pressure. They were bright red, hard, and became pale on pressure. The larger papules, more particularly that on the tragus, added to the discomfort of the patient by a constant burning which became more annoying as it became more tense.

About the end of the first month of this eruption, the erythema gave way to a characteristic blueness, and the pain grew less; finally, all the original spots of erythema became gangrenous and sloughed. The deepest slough came from the tragus, and in about eight weeks from the beginning of the facial erythema this process had run its course. The gangrene was followed by repair, and the pain in the face and ear was relieved. The only other superficial loss of tissue noted in this case followed an erythematous spot about the size of a three-cent piece over the middle and at the free margin of the left sternocleidomastoid muscle. This behaved much like the facial gangrene, was not as deep as that on the left tragus, and healed without treatment.

This brings us to the more important and unique complication of this rare symptom complex. The striking bright color of the end of the thumb has already been mentioned. There was no coldness anywhere about the fingers, there had been no change in symptoms, and the case seemed as hopeless as ever before. On the 16th of September there were positive evidences of gangrene of the terminal phalanx of the heretofore erythematous thumb. The tip became cold, blue, shriveled in appearance, and had a distinct V-shaped line of demarcation. After a process of dry gangrene it separated entirely on October 21st, leaving the articular surface of the bone below clean and smooth. In another month this had completely healed.

A word concerning the behavior of the erythema and pain after the beginning of the gangrenous process: While the erythema was by no means controlled, but few new papules appeared; these were less painful, lasted a shorter time, and their disappearance was followed by less subcutaneous infiltration than had been experienced during the active period of the disease. These were erythematous at all times and presented the same appearance as those which preceded the gangrene. The macular erythema surrounding the finger tips did not fade until the disease had run its course. The burning, stinging, and darting pain became less, was more easily endured, and ceased entirely after the separation of the finger tip on October 21st. Shortly after this occurrence there were no symptoms referable to the hand though the trophic changes are seen in the fingers. These continue somewhat stiff. The muscles have not yet fully regained their normal development. The photographs kindly taken by Mr. Van Duyn show the condition of the hand at the present time. There is no sign of erythema. Since her recovery the patient has successfully withstood an alarming attack of pneumonia.

The history of the case justifies the diagnosis of *erythromelalgia associated with true Raynaud's disease.*

In 1872 a paper was written by Weir Mitchell[1] describing a peculiar condition in which a foot or hand (usually a foot) became red and at the same time painful, without attending phlegmon or inflammatory changes. But little notice was taken by the profession of this communication until the same author, in July, 1878, in an article "On a Rare Vasomotor Neurosis of the Extremities, and on the Maladies with which it May Be Confounded," [2] reported fifteen cases of the disease, which he elaborated in his usually graphic style. He suggested the propriety of "labeling" the condition associated with erythema and pain in the extremities "erythromelalgia."

In the preparation of this paper the writer has searched all available literature on the subject at his command, and appends a bibliography which, if studied, will be found to give reference to forty-four cases, including the one above detailed. In this search it was discovered that the acute observer and clinician, Graves,[3] in 1843, described a peculiar condition of the extremities associated with symptoms much like those mentioned later by Mitchell, in which he suggested that the nerves and arteries of a part independent of the heart could affect local circulation sufficiently to give rise to local symptoms of a peculiar and unique character. In spite of the detailed description of erythromelalgia given by Mitchell, but few cases of this condition (Grenier,[4] 1873, Sigerson and Vulpian[5] 1873) were reported for a number of years, and these without reference to the original articles. So rarely was the disease mentioned in medical literature that the writer finds no reference to erythromelalgia in the Index Catalogue of the Library of the Surgeon-General's Office. Until 1892 the only case mentioned in German medical literature is found in the work of Seeligmuller[6] on "The Diseases of the Nervous System."

Lannois,[7] in 1880, in a thesis on this subject, could find but twenty-four cases to report, including those of Weir Mitchell, with others,[5] which were positive and two or three which were doubtful.

An interesting coincidence was the presentation of three cases of this affection at a meeting of the *Gesellschaft der Charite-Aerzte* by Gerhardt,[8] Senator[9] and Bernhardt,[10] after which a thorough discussion followed, and several present mentioned conditions met in practice resembling very closely the cases reported. These articles are cited in the appended bibliography.

From 1880 to 1892 Senator in his search could find but four new cases. Besides the references already given, the writer found the subject most thoroughly considered in the *Encyclopadische Jahrbucher*[11] of 1893–1894; while the most exhaustive article which has thus far appeared is found in the *Berliner Klinische Wochenschrift* by Lewin and Benda.[12] The latest, and one of the most scientific considerations of erythromelalgia yet published, is given by Dehio[13]. These with many others of great value and interest are cited in the bibliography which accompanies this paper.

The clinical history of the case reported is full of interest, not so much because of the fact that it pictures a case of erythromelalgia, but for the reason that it proves beyond question the fact that Raynaud's disease may accompany this condition, a complication which has been denied heretofore by some writers on this subject.

In Collins' article, which appeared in Dercum's work on "Nervous Diseases," the positive statement is made—in considering the diagnosis of Raynaud's disease—that "Erythromelalgia may be confounded with Raynaud's disease when local erythema occurs in the second stage, but it may be differentiated by its mode of onset and the fact that erythromelalgia never goes on to gangrene."

After giving Dr. Collins a brief history of my case he kindly wrote, that "from the data which I have at hand, I have never seen a case of erythromelalgia associated with or followed by gangrene, and I have had occasion to see many of these cases during the past few years." He said, further, "It seems to me that in your case there is no doubt that the gangrenous process has followed on the symptom complex constituting erythrymelalgia. . . . I shall keep your case in mind when I correct my article for the next edition."

The writer's case stands practically alone in medical literature so far as he has been able to discover, for no case has come under his notice in which the last stage of Raynaud's disease accompanied erythromelalgia. I have found but three references which bear *directly* upon this phase of the disease. Morell-Lavalle[14] reported a case in which the symptoms of erythromelalgia alternated with those of partial local syncope. The second case is reported by Mills[15], in which the patient, a woman aged twenty-three years, after two years of persistent erythema of the extremities, developed symptoms resembling the milder Raynaud phenomena.

The third case—that of Dehio[13]—was treated November 28, 1894, by resection of a small portion of the ulnar nerve above the wrist, and an equally small piece of the ulnar artery. During the following

April (1895) the tip of the little finger of the operated hand became black and a small piece of bone with pus and blood escaped.

The propriety of changing the diagnosis to Raynaud's disease after the advent of gangrene was naturally considered. The unusual length of time during which the erythromelalgic symptoms continued, with their persistence after the fully developed gangrene, led me to conclude that the latter was a complication depending upon the former; hence I preferred to continue the diagnosis of erythromelalgia and speak of the Raynaud's disease as an accompaniment and sequel.

The question of the true pathology of the subject under consideration has never been settled. Erythromelalgia is conceded by almost all authorities to be a condition depending upon vasomotor disturbance. Whether it ought to be considered an independent disease is by no means decided, though Dehio believed that his case justified that conclusion. We are not ready to assert with any degree of certainty that it is always dependent upon the same pathologic change. Until our knowledge is enriched by positive pathologic data, we are safe in considering the symptom complex, dependent on either peripheral, cerebral, or spinal changes, particularly involving the cervical and lumbar portions of the cord, most likely the posterior and anterior horns of the gray matter. That a close relation exists between erythromelalgia and Raynaud's disease there can be no doubt when the symptoms of the reported case and those to which I have referred are considered (Osler[16]). The early headache, the erythema, the pain, and the final gangrene, were dependent upon the same underlying cause.

Dehio's case, already mentioned, is the only one on record in which an examination has been made of the artery leading to the diseased area. Microscopic section showed marked changes in the intima, which materially narrowed the lumen of the vessel.

The ultimate gangrene in my case can be explained in no other way than by considering it the result of secondary vascular change, a conclusion which is strengthened by the overwhelming evidence of changes in the arteries, particularly in the intima, consequent upon long-continued distension or vasomotor paralysis. Thoma,[17] in his brilliant and convincing article which appeared in Virchow's *Archiv*, established the fact beyond contradiction that compensatory changes take place in arteries which have remained distended for a considerable time, and which in truth are too large for the blood which courses through them. In my case it is safe to conclude that this compensatory effort finally caused complete occlusion in some of the smaller arteries supplying the terminal phalanx of the thumb, and death of the part resulted.

References and Bibliography.

[1] Weir Mitchell, *Phila. Med. Times*, 1872.

[2] Weir Mitchell, *The Am. Jour. of the Med. Sciences*, July, 1878.

[3] Graves, "Clinical Lectures," 1843.

[4] Grenier, "Bordeaux Medic," 1873.

[5] Vulpian, "Leçons sur l'Appar. Vasomoteur," Paris, 1873.

[6] Seeligmuller, *Wenden's Sammlung kurzer Med. Lehrb.*, Bd. V., 1892, S. 379.

[7] Lannois, "Thése Paris," 1880.

[8] Senator, *Berl. klin. Wochenschr.*, 1892, No. 45.

[9] C. Gerhardt, *Berl. klin. Wochenschr.*, 1892, No. 45.

[10] M. Berhardt, *Berl. klin. Wochenschr.*, 1892, No. 45.

[11] Eulenberg, *Encyclop. Jahrbucher*, 1893–4.

[12] Lewin and Benda, *Berl. klin. Wochenschr.*, 1894, Nos. 3, 4, 5.

[13] Dehio, *Berl. klin. Wochenschr.*, 1896, No. 37.

[14] Morell-Lavelle, *Berl. klin. Wochenschr.*, 1894, p. 146.

[15] Mills, foot-note, *Berl. klin. Wochenschr.*, 1894, p. 146.

[16] Osler, "Practice of Medicine," New York, 1896, 2d edition, p. 1016.

[17] Thoma, *Virchow's Archiv. für Path. Anat.*, Bd. 93, 113–116.

Anche-Lepinasse, *Revue de Médicine*, 1890, p. 1049.

Annual of the Universal Medical Sciences, 1894, vol. II., p. C.-58.

Baginski, *Verhandl. der Berl. Med. Ges.*, 1892, S. 241.

Dreschfeld-Morgan, *Lancet*, 1889, 5 I., p. 11.

Eulenburg, *Berl. klin. Wochenschr.*, 1892, p. 48.

Eulenburg, *Deutsche Med. Wochenschrift*, 1893, p. 1325.

Eulenburg, *Neurolog. Centralblatt*, 1893, p. 657 ff.

Eulenburg, *Verhandl. der Berl. Med. Gesellschaft*, 1892, No. 45.

Graves, "Clin. Lect.," 1864, p. 826.

Henoch, *Gesellsch. der Charite-Aerzte*, 30, VI., 92.

Henry, Frederik P., "A Case of Myxedematoid Dystrophy" (*Jour. of Nerv. and Ment. Diseases*, 1890).

Koch, *Berl. klin. Wochenschr.*, 1892, p. 1146.

Landgraf, *Gesellsch. der Charite-Aerzte*, Sitzung. vom 30, June, 1892.

Lewin, G., *Berl. klin. Wochensch.*, 1894, p. 145.

Marcacci, "Giorn. delle Malattie della Pelle," 1876,

Machol, *Berl. klin. Wochensch.*, 1892, No. 51, p. 1319.

Morgan, *Lancet*, 1889, 5 I., p. 11.

Mackenzie, Stephen, "Lannois," I., c., p. 40.

Marcacci, "Giorn. delle Malattie della Pelle," 1887.

Morgan, *Lancet*, 1889, 5 I.

Nieden, A., "Ueber Erythromelalgie und Augenleiden," *Arch. f. Augenhk.*, xxviii.

Paget, James, *St. Bartholom. Hos. Rep.*, 1871, p. 67.

Sigerson (*Progres Méd.*, 1874), "Lannois," I., c. p. 41.

Stille, H., cited in Weir Mitchell's paper in the *Am. Jour. of the Med. Sciences*, 1878, July.

Strauss, *Societ. Méd. des Hôp.*, Seance du 29, Mars, 1880.

Strumpell, *Krankh. d. Nervensystems*, 2 Aufl., Bd. 2, S. 127.

Sturge, Allen, "Rare Vasomotor Disturbance of Leg," "Trans. of Clin. Soc. of London," *Brit. Med. Jour.*, 1879.

Vulpian, "L'Appareil Vasomoteur," t. II., p. 623.

Woodnut, *Jour. of Nerv. and Ment. Diseases*, 1884, October, S. 627.

Factory Inspection in Newark.—Chief Factory Inspector of New Jersey John C. Ward is making the rounds of the bakeries and factories in Newark and Essex County. So far no violations of law have been found. Child labor is still in evidence, but largely through evasions of the law by parents. Children are required to have certificates before they are employed. The old unsanitary condition of bakeries has been abolished by the law. The baking in all places is done in well-ventilated, clean rooms. The improvement noticed is due to rigid enforcement of the law, which resulted in the successful prosecution of several violators.

DIAGNOSTIC AND THERAPEUTIC CONSIDERATIONS WITH RESPECT TO CERTAIN DISEASES OF THE UPPER AIR-TRACT.[1]

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I FEEL quite sure that none of those who are present will be inclined to question the great advances which have been made during the past twenty years or more in the diagnosis and treatment of many affections of the upper air-tract. Thanks to the use of the laryngoscope and rhinoscope, we have before our eyes the diseased appearances of the throat and nose. Taken with the functional disturbances which accompany them in greater or less degree, and with microscopic investigation, frequently of diseased tissues which may be and are properly removed at times by surgical means, a very accurate statement can be made of the nature of the lesion. Whenever, for sufficient reason, pathologic examination cannot be made during life, as, for example, when no operative procedure has been instituted, and if death occurs later, investigation enables us to define closely the diseased process.

While the foregoing will doubtless be admitted, the other side is surely true, *viz.*, that with the greater insight into certain conditions which at first appear to be local in their origin and march, the constitutional influence is apt to be ignored in a measure, and the symptoms in the main are accounted for too much by mere local changes. Thus it has become true that local applications, operations, various, simple, or difficult, are believed to ameliorate or cure, and the general system is comparatively little if at all considered or attended to. It has seemed to me that the later German school of medicine is largely responsible for the somewhat narrow and unfortunate interpretation of diseases of the upper respiratory tract. General applications of disease—general pathology—the philosophic combining of many local expressions of impaired function under one head—that, has been, in my judgment, the work of the French school. With them it is not new. It goes back far. It began, indeed, with Broussais, was carried on by Bouillaud, Trousseau, Grisolle, and those of our own day and time, and still remains. There is a *juste milieu*, or happy medium, and this is the true goal of the diligent worker, the careful observer, the searcher after truth.

Ten or fifteen years ago every well-educated physician who had given even limited attention to the study of nasal or throat affections provided himself with a suitable atomizing apparatus, and was convinced that by frequent applications of a spray, astringent or soothing in nature, he could effectually allay many inflammatory affections. Even at that time internal medication of the upper respiratory tract was considered to be of secondary importance by very many men, skilled and learned in their art. By and by they found that these inflammatory conditions were not always relieved or cured after this manner, and they quickly sought the solution of the problem. In the nose, it was affirmed, hypertrophy of the turbinates, or a deviated septum, existed, and these were the underlying pathologic conditions which occasioned repeated acute inflammation locally.

When this opinion was firmly established we know how soon the period came when frequent operations on the offending structures were performed. The turbinates were cauterized, chiseled, trephined, excised. Numerous ingenious devices rapidly accumulated for straightening the septum, for excision of redundant tissue, for planing down all bulging or irregularities. Despite all this doing, and the rapid increase of the specialists in diseases of the throat and nose, it was found that nasal and throat affections were none the less prevalent. To-day I am happy to say there is a manifest tendency on the part of a few to acknowledge the governing forces in the human economy. These physicians recognize at present that a septum is often irregular and deviated among perfectly healthy individuals; they know that the better way of keeping down a growing hypertrophy of the soft tissues over the turbinates is to give mild aperients to act on the liver, to treat with appropriate, general means every acute coryza which develops, and not let it run its course unchecked. They know that the gouty, rheumatic, lithemic, malarial, syphilitic dyscrasiæ will excite and produce inflammatory action of the pituitary membrane despite the most careful hygiene, unless wise indications of treatment are carried out carefully and intelligently. Nor is this all. They know that fatigue, bad air, damp, changeable atmospheric conditions will also promote these manifestations; and yet they also recognize that there are times when a conservative local treatment, or well-considered operation, is the only satisfactory method of securing good results.

Again, some of my *confrères*—the specialists—know at present that when a surgical procedure is adopted, in order to be successful attention should be paid to surgical methods; and by this I do not mean merely to understand what operation should be done, and to have the skill and courage to perform it; but they must also have the means and opportunity and knowledge to treat the patient's nose with aseptic precautions before, during, and after the operation. In this way, and this way alone, are many operations justified by the ultimate benefit which the patient receives. It behoves the general practitioner to recognize when and where he can acquit himself properly and conscientiously. In order to know this much it is not essential to be a specialist of nasal and throat affections. It is necessary, however, to acquire moderate skill in the use of the rhinoscope and laryngoscope, and afterward to make use personally of the correct treatment or pass the case over for awhile, at least, to one who has sufficient knowledge and conscience to treat it properly.

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[1] Read at the Twelfth Annual Meeting of the Association of American Physicians, Washington, D. C., May 5, 1897.

Take, for example, a very large number of persons who have a so-called nasal catarrh. They may be adults or children, and the condition may be marked by obstruction of the nasal passages, which is carried to that degree, very often, that they become more or less habitual mouth-breathers. Some there are in whom the mouth-breathing occurs only at times, and during or subsequent to an attack of coryza; others there are who for many weeks or months, and especially at night, in the recumbent posture, cannot get air enough through the nasal passages. Very many cases of both types can be completely relieved by one or more mild cauterizations with glacial acetic acid. This acid is rapidly and efficiently applied to the nasal mucous membrane by means of a flattened probe wrapped in cotton. A two-per-cent. solution of cocain is sprayed into the nasal passages a few moments previous to the application of the acid, and all pain is abolished. The nares are covered with a little vaselin in advance, and all risk of irritating the skin is avoided. An antiseptic spray through the nasal passages after the cauterization, and the use of a borated cotton plug in the nares for a few hours, takes away the bare possibility of any subsequent complication. In a few days the patient blows into his handkerchief a few shreds of mucous membrane, white in color, and great, if not absolute, relief of breathing quickly follows.

Another symptom of a very frequent ailment in adults and children, with or without nasal obstruction, is the frequent dropping of mucus or muco-pus from the nasopharynx into the throat. It occasions cough, bad breath, and disordered digestion. To men and women it is a source of extreme annoyance, and even disgust, from the fact that they are frequently compelled either to swallow this offensive, nauseous secretion or to expel it by efforts of hawking and expectoration. Children are awakened at night with choking attacks, laryngismus, night-terrors, obstructed breathing, thus occasioned. How can it be relieved? By general medication alone? By change of air? By dieting? Very rarely, if ever. Will inhalations or atomized solutions through the nose relieve the condition and obviate the subsequent phenomena? Frequently they ameliorate for awhile; very exceptionally they do more. In adults direct astringent or antiseptic applications to the nasopharynx of tincture of the perchlorid of iron and glycerin, compound tincture of iodin, or of carbolic acid and glycerin will often be of great service in a very short time. To still further augment their value, however, we must often attend to general conditions, and here, again, anemia, impaired nutrition of different causation, the herpetic diathesis, must be taken into account and wisely treated. For many such a sojourn at an alkalin or sulphur spa abroad will help wonderfully to produce a lasting cure.

In children we should constantly bear in mind that such symptoms, if persistent, will often indicate a more or less considerable development of adenoid tissue. Here, again, the local applications before mentioned may prove to be very useful; but if the mass of tissue be at all pronounced, and the child be in relatively poor, general health, they are insufficient. To secure absolute relief we must depend on direct removal of the tissue itself. If the amount be small, it may be removed in many instances with the nail of the index-finger, with is introduced behind and above the palate to scrape the nasopharynx thoroughly. The finger should be protected with a suitable finger-stall in rubber or metal, and the hand washed with soap and water, and bathed with alcohol before its introduction. The child's head is bent forward over a proper receptacle, and after the scraping is finished (which takes only a few moments) the child is urged to blow the resulting blood, mucus, and shreds of adenoid tissue from the nose, and also to expectorate them from the throat.

Frequently such operation as this is insufficient or not indicated, and to establish a complete cure a specialist's operative treatment should be secured. This means preferably the use of Gottstein's curette or of some form of forceps, usually aided by means of more or less profound local or general anesthesia with cocain, nitrous-oxid gas, bromid of ethyl, chloroform, or ether.

The presence of the so-called hypertrophied lingual tonsil or lymphoid tissue, which frequently enlarges in front of the epiglottis in the glosso-epiglottic fossa and encroaches upon the larynx, is often ignored or improperly treated. Many times I have observed cough—irritative, ineffectual, obstinate—thus occasioned. The use of cough-mixtures, inhalations, and sprays, are relatively useless, and even climatic changes, cod-liver oil, etc., are ineffectual to cause notable amelioration in this local state. In many instances, however, this tonsil becomes acutely inflamed and swollen, and when such is the case it is without doubt produced by a rheumatic or gouty dyscrasia. To ignore the use of the salicylates and colchicum means either no cure or surely a very protracted course of treatment.

Whenever the tonsil is chronically enlarged and occasions globus hystericus (so-called) or choking sensations, and a constant tickling and irritation in the throat near the larynx, recourse must be had first to local applications of iodin, carbolic acid, or iron. If these fail, repeated applications of the galvanocautery will ultimately afford permanent relief in many instances. In the most severe cases ablation by means of Chapelle's tonsillotome, or some similar instrument is our sole available and suitable resource. Under these circumstances a specialist's services are usually required.

Take, now, numerous examples of laryngitis, acute, subacute, or chronic in nature. Is there no such disease as an acute inflammation of the larynx? One bold specialist of wide renown has almost dared to affirm it. So convinced are some laryngologists that acute laryngitis proceeds from and is almost wholly caused by inflammation, or obstruction of the nasal passages, that they give the larynx itself little or no treatment—local or general—and yet how erroneous such views are. I am here prepared to affirm, and I still believe, that there is such a disease, and a tolerably frequent one, as acute laryngitis. I believe it may be intercurrent with inflammation of the nose, pharynx, trachea, and bronchi. I believe it may be limited in a great degree to the larynx itself, and in either case be in no sense dependent upon the intranasal condition. I believe, also, that there are numerous instances in which the acute laryngitis is preceded by nasal and pharyngeal inflammation.

In many examples of acute laryngitis I should consider myself derelict in the highest degree if I did not combine general and local medication. When, however, we come to the treatment of the subacute form of laryngitis of simple catarrhal or inflammatory type, I rely mainly upon the use of local applications of iron, iodin, zinc, copper, and carbolic acid, aided with mild antiseptic sprays. If the catarrhal condition continues or extends to the trachea or bronchial tubes, I feel called upon to make appeal to anticatarrhal agents internally, among which I rank ipecac, ammonia salts, and beechwood creosote highest.

If the laryngitis be chronic, and either the syphilitic or tuberculous nature of it be suspected or confirmed, we must combine appropriate local and general means to attain the best results of treatment. In order to follow up such cases intelligently and judiciously we should make frequent, skilful use of the laryngeal mirror and the armamentarium of the well-informed laryngologist.

Is it wisdom to inject the soft parts with antiseptic preparations or scrape out ulcerated tissues and apply painful caustics in order to effect beneficial local changes, if possible, of laryngeal tuberculosis? I believe not, in the large majority of cases.

My conviction in this matter exists because, as a rule, the concomitant intrapulmonary condition is of such a character—of such an advanced stage of tuberculization—that I regard it as almost criminal to make a poor sufferer submit to additional pain for a prospective gain of little or no value. Still, there are a few exceptions to this rule. Krause and Heryng have reported, as we know, some very brilliant results from active local interference, and he would be an ignorant or unwise practitioner wholly to disregard them in all cases.

In syphilitic stricture or stenosis of the larynx or nasopharynx it is not broad-minded to ignore what intubation or palliative dilatation may be able to accomplish in any way of relieving constant distress. Here, again, the specialist has his *rôle*, and a valuable one it is, to help us ameliorate otherwise hopeless cases.

I might prolong this paper unduly. I have written sufficient, I trust, to open a fruitful and interesting discussion of a practical and important subject. In no branch of medicine are the contrasts more frequent and essential between the general practitioner and the specialist than in what pertains to the wisely governed treatment of many affections of the upper air-tract. I am one of those who have always held —who still holds—that the clinician, the general practitioner, should usually—not to say always—control the specialist in all branches of practical medicine. I do not mean to affirm that the clinician should invariably and always treat the patient himself. I do say he should be the guiding hand—the one whose province it is to say, in most instances, to what extent it is wise and considerate for him to pursue particular lines of work.

New York State Asylum Expenditures.—Some idea of the magnitude of the requirements of the State Hospitals for the Insane can be obtained from the following statement as to staples consumed during last year: Flour, 26,235 barrels; meat, 4,749,025 pounds; sugar, 1,012,487 pounds; coffee, 321,324 pounds; tea, 75,765 pounds; butter, 941,170 pounds; eggs, 463,160 dozen. The total consumption of coal was 97,761 tons. The expenditure during the year for provisions and stores amounted to $1,027,697.13; total expenditure for clothing, $179,305.64. The commission expects that the expenditures of the current year will not materially exceed the foregoing.

SYPHILIS IN PREGNANCY.[1]

BY ROBERT A. MURRAY., M.D.,
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THAT we do not at the present time see cases presenting the direful ravages and mutilations of syphilis which were so frequent not many years ago is due not only to a more perfect knowledge of the disease and the principles guiding its treatment, but also to the fact, to which many expert observers testify, that syphilis is less malignant and more tractable in management than formerly. This observation has, I believe, led to a false feeling of security, has diminished the apprehension exhibited by subjects of this disease, and as a result, with the removal of outward manifestations, due to the continuance of a short mercurial course, both physician and patient have ceased treatment; and the latter, on marrying, with full faith that he is cured, is rudely shocked by the direful effects to his wife and children. Later on we have those most terrible complications of nerve syphilis in the brain and spinal cord, causing ruin to health and prospects, and even death.

As obstetricians, it is our province to recognize this disease as being the most powerful factor in causing miscarriages and still-born children; and what is perhaps more distressing, children are brought into the world with, as has been well expressed by Fournier, "an inaptitude for living," to be cut down in infancy by intercurrent disease, or to die miserably from inherited syphilis. From hospital statistics these deductions become remarkably apparent; yet they are not more convincing than those obtained in private practice from a smaller number of cases. Fournier gives the following results in 167 cases of pregnancy coincident with syphilis: Cases of survival of infant, 22; cases of death of infant (abortion), premature labor, still-born, and dead shortly after birth, 145; total, 167.[2]

Dr. Le Pileur, physician of Saint Lazare, Paris, prepared statistics for ten years of the mortality among children, the issue of syphilitic mothers. He found that in 414 pregnancies 154 were terminated either by abortion or by premature expulsion of the still-born infant. Of 260 infants born at term and living, 141 died within a short time, and only 22 survived one month. This makes a total of 295 deaths in 414 pregnancies, that is to say, in round numbers, almost 3 deaths to 4 births. Among the children considered as "surviving," there assuredly were a certain number who succumbed later directly from the disease.

In private practice the physician is misled in finding a cause for abortion, premature labor, and still-born births by the ignorance of the mother as to the disease and by some fancied cause, as a fright, a nervous shock or a fall, which among the laity are generally considered the only causes of premature emptying of the uterus apart from criminal abortion. Again, the husband of the pregnant wife either thinks that the syphilis he had when a young man has nothing to do with the mishap, or when questioned, if the cause is suspected, will state that he had a chancre, which was only a small one, and with slight manifestations, which did not amount to much, and that he was assured by his physician that he was properly cured.

Up to the present time, unless a child that was still-born showed upon its skin the lesions of inherited syphilis, a diagnosis of the cause of the still-birth was rarely made, as our knowledge of the changes in the placenta, and in the new-born, was insufficient, and autopsy was very rarely allowed. For the protection of the patient in the future, and the prevention of premature labors and still-births, it is very necessary that autopsies should be obtained on the children whenever possible.

The Syphilitic Placenta.—Simpson, D'Outrepont, Virchow and particularly Fränkel have shown that the changes in the placenta, and in the endometrium of syphilitic pregnant women are the same as occur in other syphilitic lesions, that is, an increase to a large extent of the fibrous tissue, and an infiltration of granulation cells into the villi with degeneration of their epithelial covering.

According to the time of infection, Fränkel states there are differences in the placenta and endometrium. If the mother is infected during the fruitful coitus there may be endometritis placentaris, characterized by the enormous overgrowth of the decidual cells, or the overgrowth of connective tissue, as well as by syphilitic disease of the villi. If the mother is syphilitic before conception, the disease of the placenta takes the form of endometritis placentaris gummosa. If the mother is infected during the later months of pregnancy, the placenta usually remains unaffected.

Fränkel states that this infiltration of the villi with granulation cells, and their consequent increase in size and distorted shape, is characteristic of syphilis, and might serve to make certain the diagnosis of the disease. In gross appearance, syphilitic placentæ vary greatly, depending on the time of death of the child and on the period of pregnancy when it is expelled. If the child is macerated, the placenta is white, soft, and greasy to the feel; if labor is at full term, and the child is alive, the placenta is unusually large and pinkish, due to the thickened decidua, very often with attached clots showing a previous hemorrhage into the placenta, or the occurrence of thrombosis of the lacunæ; or there may be found nodes, lamellated in structure and undergoing degenerative changes in the central portion. Calcareous degeneration is also seen, but this is by no means diagnostic of syphilis.

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[1] Read at the Twenty-second Annual Meeting of the American Gynecological Society, Washington, D. C., May 5, 1897.

[2] Fournier, "Syphilis and Marriage," p. 66.

As a result of this cell infiltration of the villi, and the proliferation of the decidual cells, there is obliteration of the blood-vessels and encroachment on the intervillous spaces, and the function of the organ is more or less destroyed, the villi themselves being destroyed by the formation of nodes. When endometritis placentaris is present, the hyperplasia of the decidual cells attaches the placenta to the endometrium, so that it may be retained firmly at points and lead to hemorrhage or septicemia. The placenta and endometrium in these cases is apt to be less bloody, and when washed the endometrium has a bacony feel, and the lochia is more watery and very much less abundant than ordinarily. No physical signs are present during pregnancy to diagnose placental syphilis.

Fetal Syphilis.—According to Ruge, eighty-three per cent. of premature and still-births have their cause in syphilis of one or both parents. We must also include the number of syphilitic children born alive who eventually die from inherited syphilis, to form a complete idea of the destructive effect of syphilis on the fetus. Syphilis is evidenced in the fetus by the early death of the latter in the uterus; by the peculiar old, wizened, and shrunken appearance of the child when born alive; by the presence of pemphigus and scaly eruptions, fissures at the mouth and anus, inflammations of the mucous and serous membranes, condylomata at the mucous orifices, and growths of the connective tissue in the arteries, constituting endarteritis. In the liver, spleen, pancreas, lungs, brain, and spinal cord circumscribed or diffuse gummatous deposits are found. These are most easily observed in the liver in the shape of minute grayish-red or grayish-white pin-head and larger-sized bodies, which under the microscope are found to be nests of well-packed embryonic cells surrounded by a dense mesh of connective tissue with radiations passing toward the normal hepatic cells in every direction. Those changes in the fetal structures are more disastrous than in the adult, because the subject is infected *ab ovo* with the special toxin of the malady.

More striking and peculiar are the changes described by Wegner, Parrot, and Hutchinson. Wegner describes a form of osteochondritis, at the epiphysodiaphyseal extremity of a long bone. In these cases premature ossification goes on with increased proliferation and growth of individual cells; or, there may be actual arrest of the bone-making process by premature sclerosis of the intercellular hyalin matrix of the cartilage. Parrot describes an atrophy, in which rosy or yellow-tinted, jelly-like foci develop at the line of junction of epiphysis and diaphysis, and in which eventually in place of bone a loose reticulum of fibrocellular structure is formed, allowing easy dislocation. In another case described by Parrot, osteophytes of varying thickness, projecting at right angles to the osseous shaft, develop from bony trabeculæ and interlace at one or several points beneath the periosteum. Under the microscope there is recognized an exceedingly irregular arrangement of the Haversian canals and osteoblasts, with filling up of the canals with granulation cells so that the arterial supply is cut off; at other points the osteophytes produce porosities strikingly similar to rickets.

The child born of syphilitic parents may not present any evidences at birth of the disease, except the peculiar old-man appearance. Subsequently, snuffles develop, then restlessness and irritability, accompanied by a peculiar moaning cry, indisposition to nurse, marasmus, and death, sometimes very suddenly and seemingly without cause, it only being explicable by the changes found in the arterial system. Again, the child may be perfectly well until a cold, digestive disturbance, or vaccination, by perturbing the system, causes syphilitic manifestations to appear.

Syphilis in the pregnant woman exhibits itself in various ways, depending on the time and mode of infection. When syphilitic before pregnancy supervenes, the ordinary signs have been, or are, present; when infected at the fruitful coitus, from a primary lesion on the man, the chancre, according to most observers, appears earlier than in the unimpregnated (at about the second week), and its course is usually more severe. The secondary symptoms are usually light, so that some have thought that pregnancy has a benign influence on the disease. In the three cases I have seen the manifestations of the disease seemed quite as severe as in an ordinary case, and when the pregnancy was interrupted by the death of the fetus and its expulsion from the uterus, the symptoms seemed in no wise ameliorated. This form of infection is certainly the most fatal to the fetus. When the pregnant woman is infected by a man suffering from the secondary effects of syphilis, the duration of the disease, its severity, the amount, efficiency, and duration of the treatment are the important factors in determining the effect on the fetus. If infected before the later months of pregnancy the disease usually kills the fetus, particularly when the disease in the father of the child is in an active stage and uncontrolled by treatment. Many authorities claim that infection in the last months of pregnancy does not affect the fetus disastrously, but to this an unanswerable argument can be made in the fact that, following Colles' law, such an infant can, and does, nurse its own mother without infecting her or showing an initial lesion on itself, while the mother will subsequently show the effect of the disease. When both parents are syphilitic, as was stated in the beginning of this article, the effect on the child is very fatal.

Time and treatment do away with the evidences of syphilis, but the amount of both time and treatment and the limit when the disease is cured, is difficult to state. I have had cases in which the time from the appearance of the initial lesion has been as long as six, and in two cases, even twelve years, yet the disease was the cause of death of the fetus. It is, however, a frequent experience to see cases in which sterility for some time will be followed by pregnancy, abortion resulting at the second or third month, subsequent pregnancies terminating at the fourth, sixth, or seventh month, and finally, after four or five pregnancies, result in the birth of a live child, with little, but still marked, evidences of syphilis. Eventually the disease, by time alone, seems to lose its force, and healthy children may be born. Later in life these children often present the enlarged glands, the red inflamed margins of the eyelids, and Hutchinson's teeth which are characteristic of inherited syphilis.

The diagnosis of syphilis in pregnancy, particularly when the father alone knows of the existence of the disease, is sometimes difficult. If the pregnant woman has been infected by a primary lesion, the secondary results will make the diagnosis certain, even if the initial sore was unobserved. When the husband denies having had the disease, however, a careful examination must be made of his person for involvement of the glands in the groin, and for the lesions of the mucous membranes. Twice I have thus shown that the husband and no other man was the guilty party. When the husband has syphilis and, believing he has been cured as there have been no active signs of the disease for some time, he impregnates his wife, the disease usually evinces itself about the middle of the third month by the appearance of mucous patches on the tonsils and pharynx of the wife. The physician who is called to a patient with sore throat, who at the same time is pregnant, will be able to determine the diagnosis from the presence of these patches, there being an absence of fever or evidence of diphtheria, and from the enlargement of the lymphatic glands, the swelling not being confined to those of the neck. Careful inspection also shows condylomata at other mucous orifices.

Consulted by patients who have had several miscarriages, the diagnosis is made positive by leading the patient's memory to the appearance of the fetus when born, or by the absence of a history of accident or other cause for abortion, and by observing the enlarged suboccipital, epitrochlear glands, etc., which are the vestiges of the disease. If the husband can be interrogated, a history of his attack of syphilis may sometimes be obtained. Some authorities state that in the absence of any other causes for frequent miscarriage, as chronic endometritis, membranous dysmenorrhea, etc., the presumption should always be acted on that syphilis is the cause, and treatment instituted accordingly. The success in the use of mercury in small doses as a tonic in building up the system might lead us to conclude without sufficient basis that the patient or her husband was syphilitic if pregnancy and a live full-term child was the result, and thus an erroneous diagnosis be made.

The Treatment of the Syphilitic Pregnant Woman.—The treatment of syphilis in the pregnant woman, when both husband and wife are cognizant of the disease, is robbed of half of its difficulties, and in the vast majority of cases, when instituted early, is successful. When, however, the patient has to be treated without feeling sick, unconscious herself of any necessity for treatment, and particularly if it is during a first pregnancy and the patient has near relatives who know of no reason for the care of a physician, and if the husband will not allow of an explanation, a problem is presented which demands all the carefulness and skill of a diplomat to solve. These considerations, in our solicitude for the welfare of our patient, often cause a physician to adopt a less effectual means of cure because it is easy and not apt to excite remark.

Mercury is the only drug that will control syphilis, either in the pregnant woman or in the non-pregnant. Many of the preparations of the drug are not easily handled, however, and some by their action on the bowels are liable to interfere with gestation. My preference is for treatment by inunction, which is disagreeable to some, and certainly is more apt to excite apprehension than when the mercury is administered by the month. I have found this method the most efficient, the most easily controlled, and least productive of such disagreeable results as salivation, diarrhea, colic, indigestion, etc. I order the mercurial ointment in bulk, and advise that a piece the size of a hazel-nut be rubbed into the skin of one upper arm morning and evening, the process being repeated the next day on the inner side of the thighs, while on the third day the inner side of the chest is utilized, and on the fourth day the arms again. If thin undergarments, such as balbriggan, are worn, and the patient takes a warm bath each night before using the inunction I have seldom seen any who complained of the treatment.

The mouth should be rinsed and the throat gargled with a weak solution of chlorate of potash and borax, to avoid stomatitis, as in all cases in which mercury is administered. As soon as the gums show redness and softness, and the blue line appears, the amount of the drug should be reduced or stopped altogether for a time. It is surprising how very infrequent the necessity occurs for the latter. Local lesions are best dressed by dusting with calomel or aristol. The baths necessarily taken by a pregnant patient treated by inunction have seemed to me to be of the utmost service in keeping the skin and emunctories active. I have never seen one of these patients suffer from uremia. When it is necessary to use mercury by the mouth, the tablets of the protiodid in one-half-grain doses three times a day, have given the best results. Mercury with chalk, in fractional doses, and the biniodid in one-sixteenth-grain doses also are highly recommended.

Syphilis always produces a decrease of the red globules in the blood, an increase of the white, and a profound deterioration of the system, which, added to the condition of hydremia and anemia, with retention of waste matter due to the pregnant condition, reduces the patient's vitality extremely. These conditions should constantly be borne in mind, and the judicious use of good food, fresh air, exercise, the ferruginous tonics, arsenic, strychnin, and cod-liver oil should be advised; indeed, specific treatment, while the most powerful tonic, is frequently inefficient if these adjuvants to overcome anemia are omitted.

The effect of the mercurial administered according to modern methods is tonic and constructive in the highest degree, as has been shown by Keyes and Taylor, and by many other syphilographers. The improvement in the system by a course of mercury is constantly shown by an increase in the number of red blood globules and a healing of lesions. These facts should be borne in mind in the treatment of the pregnant syphilitic. The iodids in my hands have not been of service in the treatment of these cases, and the fear of the effect on the uterus has prevented their use.

After labor the mother still must be treated, and frequently the child as well. Fortunately the treatment of both can be carried out by giving the mercurial to the mother, for it passes to the child in the milk. As the infant grows older, the mercurial ointment may be rubbed on its flannel band, as enough of the drug will be absorbed by the skin. The mother and child should be treated also in order to protect others who come in contact with them, and kissing and fondling of the babe by relatives should be prevented.

At the time of confinement great care should be exercised by the accoucheur and nurse to prevent infection. Syphilitic patients seem peculiarly liable to septicemia, so more than ordinary aseptic precautions should be taken. As frequently the mother is too weak to nurse her child properly, and as its depreciated condition demands the best of nutrition, a wet-nurse should not be employed on account of the danger of her becoming infected, but sterilized food should be regularly given, and this should frequently be aided by inunctions of cod-liver oil, which in my hands has often saved these poor infants.

When miscarriages have occurred from the presence of syphilis, and again, even when a child has been carried once to full term, we are not sure that subsequent pregnancies will terminate in the latter happy way, unless we treat the patient specifically not only for the disease but also for its effects.

As was stated in a former part of this paper, an endometritis is often present as a result of a miscarriage, and in many cases I have considered it the cause of subsequent abortions. The uterus is enlarged and subinvoluted, there is a purulent and watery, sometimes fetid, leucorrheal discharge, and the uterine mucosa feels, when available to the touch, hard, bacony, and nodulated. I have found that if the uterus be thoroughly curetted and painted with iodized phenol, or lightly tamponed with iodoform gauze so as to allow of drainage, the uterus becomes lighter, the discharge clears up, and with the specific treatment continued, the patient is more quickly cured, the disease being rendered innocuous in future pregnancies. In one instance in my experience, in which eight abortions and premature births had taken place, at short intervals, thorough curetting and treatment made possible the delivery of a full-term living child at the next pregnancy.

All other manifestations of the disease should be treated according to the well-known principles, which need not be enumerated here, the vital point being that the treatment should be vigorous and persistent in both the wife and husband, mercurials, iodids, and tonics being administered until the disease is controlled. After a labor in which the child is dead, both husband and wife should be told of the danger of a fatal result to the fetus should pregnancy result without prolonged and thorough treatment, and the risk of pregnancy should be avoided until a reasonable time has elapsed in treatment.

BIBLIOGRAPHY.

Charpentier (Grandin): "Traité d'Accouchement."

Lomer: *Zeitschr. f. Geburts.*, Bd. X.

Ruge, Tarnier and Budin, d'Outerpont: "Ueber die Krankheiten Abnorm. der Placenta," *Deutsche Zeitschr. f. Geburtsh.*

Fränkel: *Arch. f. Gyn.*, Bd. II., s. 373.

Sir James Gunpson: *Edin. Monthly Jour. of Med. Sci.*, Feb., 1845. "Obstetrical Works," vol. ii.

Fränkel: "Ueber Placentar Syphilis," *Arch. f. Gyn.*, Bd. V., s. 6.

Hirst: "American System of Obstetrics," vols. I. and II.

Van Buren and Keyes: "Genito-Urinary Disease and Syphilis."

Prince A. Morrow: "Genito-Urinary Disease, Syphilography, and Dermatology."

Fournier: "Syphilis and Marriage."

WHAT SYMPTOMS SHOULD WE CONSIDER MOST IMPORTANT IN DECIDING AS TO THE ADVISABILITY OF OPERATION IN MASTOID DISEASE?[1]

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THERE are two forms of mastoid disease to which I desire to refer in this paper—first, an inflammation of the mastoid cells secondary to an acute otitis media; and second, an inflammation of the mastoid cells occurring in connection with a chronic purulent otitis media.

Since the influenza made its appearance in this country, some seven years ago, there have been, according to my experience, many more cases of mastoid disease observed than ever before. It is only a few years ago that but twelve, or at most twenty, cases of mastoid disease were recorded in the annual report of the New York Eye and Ear Infirmary. In the report for 1896 there were 135 mastoid operations recorded. Formerly, it was the exception for the mastoid cells to be simultaneously involved in a case of acute otitis media. During the past few years this condition of affairs has been very frequent. A patient will have a sudden severe earache, which is followed in a few hours by a bulging of the drumhead and symptoms of mastoid inflammation. Of twenty cases that within a short period of time have come under my observation in private practice, thirteen were in children, whose ages varied from a few months to thirteen years. The age of the remaining seven patients ranged between seventeen and fifty-five. Of the latter, there were three males and four females. Of the children, eight were males and five females. In sixteen cases, the inflammation of the ear was due to cold, influenza, or tonsillitis; in one it followed bronchitis, one was due to whooping cough, and one to measles. In one the inflammation was undoubtedly caused by the cutting of four molar teeth. In two cases, due to cold, the earache was undoubtedly aggravated by teething. Of these twenty patients, all developed acute otitis media. In seventeen there was acute inflammation of the mastoid cells, and in seven it was necessary to open the mastoid process. In ten, recovery took place without operation. Of the last named, the drumhead was punctured in six cases.

In one of these twenty cases, *viz.*, that of an infant, several months old, in whom alarming symptoms developed suddenly, suggesting a meningeal complication, puncture of the drumhead gave speedy and marked relief. In another, twenty-two months old, who had had a capillary bronchitis, there suddenly developed an acute otitis media on each side. The temperature rose to 105° F. I punctured both drumheads and the temperature fell to 102° F. In this case it was necessary to incise the drumheads several times. Each time that the perforation closed, the temperature would suddenly rise to 105° F. The child made an excellent recovery. In a child eight years of age, who had a sudden attack of earache, the temperature was 102° F. An examination of the ear showed a severe inflammation of the bony auditory canal with redness and bulging of the right membrana tympani. An ice-bag was applied after the artificial leech had been used, as there was extreme tenderness over the mastoid process. On the following day inflammation occurred in the left drumhead with involvement of the mastoid process. The same treatment was followed out here. There was a copious discharge from the ears, but on the third day it was necessary to make a free incision again in each drumhead, as the discharge was scanty. The temperature gradually declined and on the ninth day became normal. In a child of eleven, who had a sudden attack of *grippe* and tonsillitis, followed by earache on the lelt side and inflammation of the mastoid process, the temperature was 103° F. There was tenderness on pressure over the middle and lower thirds of the mastoid and bulging about Shrapnell's membrane. In spite of the treatment, which consisted in the application of leeches, paracentesis of the drumhead and the use of the ice-bag, the mastoid symptoms became more marked and the temperature rose to 106.2° F. It was necessary to open the mastoid cells and to remove granulations and softened bone. The temperature on the day after the operation varied from 104.2° to 105.2° F. At this time evidences of pneumonia were discovered. Two days later, the temperature began to decline gradually and perfect recovery followed. I had another case under observation very similar to the preceding, in which the first symptom was a severe earache. Paracentesis was performed. The temperature remained high and symptoms of pneumonia were marked. The child recovered. In cases of acute otitis media following influenza, and in which the temperature remains high after the membrana tympani has been incised or the mastoid cells opened, we should bear in mind the possibility of the existence of a latent pneumonia, as well as other complications.

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[1] Read at the Thirtieth Annual Meeting of the American Otological Society, held at Washington, D. C., May 4, 1897.

In the case of acute otitis media occurring in connection with measles, the temperature suddenly arose to 104° F. There was inflammation and bulging of both drumheads, together with tenderness on pressure over the antrum and lower third of the mastoid process on each side. Puncture of each drumhead and the application of the Leiter coil, with frequent syringing of the auditory canals, was the treatment employed. After the paracentesis the temperature fell to 100° F. Of the adults referred to, one was a gentleman, fifty-five years of age, who had an attack of influenza, followed by an earache on the left side. When I first saw him there was extreme tenderness over the lower third of the mastoid, and a small perforation of the drumhead, with a thin, scanty discharge. I immediately enlarged the opening in the membrane and ordered small doses of calomel and the application of the ice coil. The temperature varied from 99.5° to 100° F. On the fifth day after my first visit, the temperature became normal. The patient made an excellent recovery. A case where it was necessary to open the mastoid cells was that of a young woman, seventeen years of age, who had a severe attack of influenza and an earache.

There was a scanty discharge at first, but it gradually became more copious. The drumhead was perforated in the lower anterior quadrant. The ice-coil was applied on account of mastoid tenderness. The drumhead gradually healed and the patient seemed to be on the road to recovery, when suddenly she again had severe pain in the mastoid. In this case the temperature was slightly above normal, never rising during the course of her illness above 102° F. It was necessary to remove softened bone and granulations from the antrum down to the tip. The patient recovered.

I have never seen a case of acute inflammation of the mastoid cells without some elevation of temperature, and I look upon this symptom as having a very important bearing upon the diagnosis. The temperature may vary from 99.5 F. to 100° F., in one case, while in another it may be much higher. As a rule, in simple cases, the temperature is apt to be much lower in adults than in children. In children, the temperature frequently is 104° or 105° F. A patient with a temperature slightly above normal may have extensive caries in the mastoid, and we may find at operation that there is an opening into the middle cranial fossa, or that the lateral sinus is exposed. This condition of affairs I have frequently observed, so that a high temperature does not necessarily indicate a very severe inflammation of the mastoid cells. If a patient is under observation who has had an acute inflammation of the middle ear for a week or ten days, and if in spite of treatment there remains tenderness on pressure over the mastoid process, with a slight elevation of temperature, I consider these symptoms, when taken together, as very characteristic of mastoid disease. Pressure should always be made on both mastoids, however, as occasionally such pressure causes pain in a healthy mastoid process.

It was formerly taught that edema and redness behind the ear were evidences of mastoid disease. Operation should not be deferred until these symptoms appear, as valuable time may be lost by so doing. The fact must not be overlooked that redness and edema over the mastoid, and tenderness on pressure, may occur in cases of furunculosis of the external meatus, so that these symptoms do not always indicate mastoid inflammation. Bulging of Shrapnell's membrane, with drooping of the posterior and upper cutaneous lining of the external meatus, are, to my mind, absolute symptoms of mastoid involvement, and I believe that in such cases it is always necessary to perforate the mastoid cells.

As to inflammation of the mastoid occurring in connection with chronic purulent otitis media, a patient recently came to my clinic who had had a discharge from the ear for ten months. He had pain and tenderness over the mastoid, especially the tip. A leech was applied. He returned in a few days and there was evidences of slight facial paralysis on the same side as the ear inflammation. He was admitted to the hospital, and, under ether, I found great destruction of bone, with the mastoid cells filled with pus and broken-down tissue. The lateral sinus was exposed, and there was a large carious opening in the tympanic roof. This was enlarged and considerable pus escaped from the middle fossa. The boy recovered. In cases of chronic purulent otitis media, I think there is no question but that operation should be at once resorted to when mastoid symptoms develop.

As to treatment of acute otitis media, the artificial leech should be applied at once. If there is any bulging of the membrana tampani, it should be freely incised, and in cases of otitis media, due to influenza, especially when there is much pain and fever, an early puncture should be made. When the mastoid cells are involved, the local abstraction of blood is most important, and this should be followed by the application of the Leiter coil. The latter is much superior to any ice-bag, and should always be used when possible. A free incision should then be made in the drumhead along its posterior border from just behind the stapes down to the lowest point of the membrana. I always use a large knife for this purpose; never a paracentesis needle. I generally leave the ice-coil in place for forty-eight hours at a time and then remove it, as the cold generally relieves the pain but sometimes masks the other symptoms. The cold can be reapplied, but should not be constantly used after the first two days. I give calomel in small doses at the commencement of the disease until slight catharsis is produced. Tincture of aconite is also a valuable remedy in the inflammatory stage. Frequent douching of the ear with a boracic acid, or occasionally a mild bichlorid solution, is necessary as long as the secretion is profuse and the acute symptoms present. I almost always administer chloroform when incising the drumhead. Especially should this be done in the case of children. This anesthetic should be used most cautiously, however, and only in such quantity that the patient will feel no pain when the incision is made. I sometimes employ Politzer inflation to remove the secretion and occasionally apply suction by means of Siegle's otoscope for the same purpose, but great caution should be exercised in the application of either method. If the mastoid symptoms persist in spite of treatment, one should not hesitate to open the mastoid cells at once.

CLINICAL MEMORANDA.

EXTRA-UTERINE PREGNANCY OCCURRING TWICE IN THE SAME FALLOPIAN TUBE.

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IN view of our preconceived ideas of the etiology, evolution and terminations of ectopic gestation, the occurrence of this condition twice in the same tube would scarcely seem possible. If we admit its occurrence in the case I report, it is certainly unique, as I am not aware of any similar case on record.

In a paper read by me before the State Medical Association of Missouri, at Sedalia, on the 19th of May last, on the subjecf of extra-uterine pregnancy, I reported, among others, the case of Mrs. T. D., then twenty-six years of age, the mother of three children, who, after passing her regular monthly period for four or five days, commenced to flow, which she regarded simply as delayed menstruation. This flow continued for four or five days, when on November 15, 1895, it suddenly stopped. She supposed she had taken cold, especially as she had some pain. On November 18th she was taken with severe pain in the left side of the pelvis, which "doubled her up," as she expressed it, and which was accompanied with faintness and diarrhea.

I made a diagnosis of tubal pregnancy, with rupture of the sac, and advised celiotomy, which she emphatically declined. In the meantime there was a return of the bloody flow. Her temperature rose to 103° F., and her pulse to 130 per minute, with great abdominal tenderness. The flow continued for about three weeks. There was a gradual subsidence of the more acute symptoms, but a distinct tumor or swelling, with great tenderness, remained for months. About December 13, 1896, she consulted me and stated that she should have been unwell about the 10th but had had only a slight show, and as she had been perfectly regular up to that time, she was apprehensive that she might be pregnant, a condition to which she was very averse. I suggested it might be the effect of cold only, and that the next period might come around all right, and advised her in any event to leave the matter alone. On January 21, 1897, I was called to see her, and found her suffering great pain. She gave me the following history:

On the 14th of the month a profuse bloody flow had made its appearance, coming on with a gush like that from a hydrant. On the first or second day of the flow, a membranous, fleshy something came away, but she did not preserve it. The bloody discharge had continued quite free, without marked pain, up to the 21st, when in the afternoon she was seized with violent pain in the left pelvic region, which was accompanied by faintness and vomiting. When I saw her the pain was still very severe and the tenderness in the suprapubic region great. Upon digital examination, a distinct tumor in the left pelvic region could be felt. It was clearly not connected with the uterus, there being a distinct interval between. It was excessively painful to the touch, and seemed about as large as a small fist and somewhat elongated. I thought I could detect indistinct fluctuation. She had no fever, but a quickened and rather depressed pulse.

I was somewhat puzzled to account for the condition. Under the circumstances I should unhesitatingly have made a diagnosis of tubal pregnancy with rupture of the sac. With a previous history and a group of symptoms which clearly indicated an extra-uterine pregnancy in the same tube, with a rupture of the sac, I hesitated. I explained to her that some serious accident had happened in the pelvis and that it indicated extra-uterine pregnancy, and that a celiotomy ought to be performed at once. To this she again objected. I gave her a hypodermic injection of one-third of a grain of morphin to relieve her great suffering, and left her, with instructions to send for me at once if any urgent symptoms arose.

The next morning, January 22d, in response to an early telephone message, I saw her again and found that she had rested fairly well during the night, but that some pain had again set in in the morning. She was quite pale, with a pulse 120 beats to the minute and depressed, but there was no rise of temperature. Digital examination produced the same excruciating pain and revealed the same swelling at the left of uterus. I explained to her that the rupture of the sac of an extra-uterine pregnancy had occurred, that the condition was an exceedingly critical one, that if she survived the immediate dangers she must expect to go through the same ordeal of suffering and ill-health as before, and advised her to submit to an operation. After much hesitation she consented, but not until late in the afternoon.

Aided by my assistants, Drs. Geitz, Schlueter, and Rohlfing, I proceeded to open the abdomen, making an incision of about two inches through the peritoneum. Passing in two fingers I found blood welling up from the pelvis, and readily recognized extensive adhesions. The uterus was retroverted and held by bands; the left Fallopian tube and ovary were somewhat prolapsed and firmly bound down. A rounded tumor could be felt about two inches to the left of the uterus in the track of the tube, which, upon attempting to raise it, became loose and dropped into the pelvis. It proved to be a firm mass made up mostly of clotted blood larger than a walnut. With my fingers I endeavored to detach the adhesions from the tube and ovary, but only succeeded in part. In fact, I was compelled to make a pedicle of a mass of adhesions that bound the ovary down too firmly to be detached. The tube and ovary were then removed, the pelvis sponged out with sterilized gauze and the abdomen stitched up with silkworm gut, without flushing or drainage. A large rent was found midway in the Fallopian tube, from which the clot had escaped during the early manipulation. The fimbriated extremity was hermetically closed, the tube appearing as though two sacs existed, the one from which the above-mentioned clot had escaped, and a larger one at the outer end, with something of a constriction between. No fetus was found, but a careful search was not made to find it in the fluid of the belly.

That a similar accident had occurred more than a twelvemonth before, involving the same Fallopian tube, the history of the case, the identical group of symptoms in each case, and the pathologic conditions found at operation clearly demonstrated. If it be admitted that the accident in November, 1895, was a tubal pregnancy with rupture of the sac, how could a second pregnancy occur in the same tube? That it did occur, I think is certain. It might be contended that the failure to find the fetus at the time of operation leaves a doubt as to the diagnosis of ruptured tubal pregnancy. Upon this point, Mr. Tait says: "I have never seen an intraperitoneal hematocele that was not due to ruptured tubal pregnancy"; and when we find a tube dilated into a sac until the distension has caused its rupture, followed by an extravasation of blood in quantity, what other conceivable explanation can be given when we know that in many similar cases the fetus has been found? The criticism might have more weight if applied to the first accident, since actual rupture of the tube was not verified and it *might* have been an extraperitoneal hematocele (intraligamentous), though such a condition is scarcely possible in view of the evidence of peritonitis which was found to have followed.

In what condition was the tube left after its rupture, after the peritonitis set up in connection with it, and after the absorption of the blood poured out at the time of the accident and the cicatrization and repair of the rent in its walls? It must be conceded that in accordance with the scheme of tubal pregnancy as at present understood, the tube should be patulous from the uterus to the *morsus diaboli* to permit of the passage of the ovum, on the one hand, and the spermatozoa on the other.

According to Bland Sutton, while the tube is expanding from the enlargement of the ovum within it, and the mucous membrane is stretched and its glandular folds effaced, "curious alterations are taking place at the abdominal ostium, which in most cases gradually bring about its occlusion, an event usually completed by the eighth week. During the first four weeks the congestion of the parts causes turgescence of the fimbriæ as well as of the muscular and serous tissues adjacent to them. When the parts are thus swollen the margin of peritoneum adjacent to the ostium is very conspicuous, and forms an irregular ring over the fimbriæ. In another fourteen days this ring projects beyond the fimbriæ, and lastly contracts and hermetically closes the ostium."

Admitting the correctness of my diagnosis in this case in the first instance, we must suppose that one of two things occurred, first, either the rupture in the first case occurred before the closure of the abdominal ostium, leaving the lumen of the tube after the repair of the rent still patulous, or, second, the fimbriated extremity having been closed, an ovum must have passed down the right tube, become impregnated in the uterus, and been forced up by muscular action into the left tube in the manner suggested by Tyler Smith and Kussmaul (referred to by Playfair).

The following is the report of the microscopic examination of the clot by Dr. Carl Fisch of this city: "The clot was carefully examined in every direction, but it was not possible to demonstrate the presence of an ovum or of its remnants. There were, however, several places where chorionic villi were present in great numbers, some torn off and single, while others formed small groups connected by parts of the membrane. A number of these villi showed evident signs of mascerataion and disintegration; others were quite intact and normal in appearance. In the latter, vascular structures could be plainly made out, showing that the embryo must have been older than two weeks."

NOTE.—Since this paper was written, my attention has been called to a most interesting paper by Dr. H. C. Coe of New York in *The American Journal of Obstetrics and Diseases of Women and Children* for June, 1893. In this article he reports one case of his own of undoubted successive tubal pregnancy in which an old unruptured tubal sac containing fetal bones was situated near the uterus and another of recent development near the fimbriated extremity which was patulous. The more recent sac had ruptured and contained a living fetus of four months. He also cites Hayden's case, also a double tubal pregnancy in which an old sac containing fetal bones was found lying apparently just outside the free extremity, while a second sac developed near the fimbriated extremity had ruptured.

TWO CASES OF FIBROID TUMOR OF THE UTERUS.[1]

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THE following two cases of fibroid tumor of the uterus are of more than usual interest, especially the first one, on account of the enormous size and peculiar multinodular conformations of the growth.

CASE I.—D. W., aged fifty-four years, married, nulliparous, consulted me about a large abdominal tumor, which upon examination proved to be a uterine fibroid. The tumor reached almost to the costal cartilages, and from external appearances the abdomen resembled in size that of a woman at full term. Upon external palpation and manipulation the growth was found to be slightly movable, the motion being limited owing to its enormous size. Contrary to the rule, menorrhagia was not of any consequence as a symptom in this case. There were, however, some symptoms referable to the bladder, such as inability to retain urine for any length of time, etc. By vaginal examination the cervix and a portion of the body of the uterus appeared to be normal, but surrounding the entire fundus of the organ could be felt a fibroid mass.

The woman was prepared for operation by the administration of tonics, salines, heart stimulants, etc., the preparation extending over a period of a week. The incision reached almost to the ensiform cartilage. The tumor appeared to be in halves, the upper half being the larger. The surface was very nodular. It was easily delivered, there being some slight omental adhesions, which were quickly tied off and separated. The pelvis was elevated at the time the delivery was accomplished. From experience gained in another case I have found it best to keep the woman in a horizontal position until the tumor is delivered, since the Trendelenburg posture may become a source of danger where large tumors exist, owing to their tendency to fall toward the diaphragm. When large growths are suddenly delivered from the abdominal cavity they very often produce profound shock, owing to the rapid dilatation of the omental vessels which before were compressed by the tumor, but by sudden relaxation drain, so to speak, the larger part of the volume of blood into the vessels in the abdominal cavity, thereby causing syncope, which might produce death. An assistant had been assigned the duty of elevating the table to an angle of 45° as soon as the tumor had been brought out through the abdominal wound. A rubber ligature was now temporarily thrown around the growth, including both tubes and ovaries, and the mass was cut away. The pedicle was surrounded by a serre-neude and the stump treated extraperitoneally. The woman was taken from the operating-table with a pulse of 70, and throughout her convalescence the pulse never reached 100, although the temperature on several occasions registered between 100° and 101.5° F. There was no nausea, and the post-operative course was as uneventful as could be desired. The pedicle came away on the seventeenth day and the remaining cavity healed by granulation. The total weight of the tumor was twelve pounds, although it was judged by some as weighing at least twenty-five pounds. Its dimensions were as follows: Longest measurement, sixteen inches; widest measurement, ten inches; and thickest, seven inches.

CASE II.—Francis R., aged thirty-seven, married, nulliparous, was examined by me three years ago, and at that time a small uterine fibroid was discovered. She was again examined recently, when it was found that the tumor had enlarged to the size of a cocoanut, while at the same time a mass could be detected on each side of the tumor in the broad ligaments. Owing to the rapid growth of the tumor, and some vesical and rectal disturbance of which she complained, an operation was advised and agreed to. The woman was in very good health and required but little preparatory treatment.

The abdomen was opened, and it was found that, in addition to the fibroid, there were cysts of each ovary. On the right side the cyst was about the size of the adult fist, on the left about that of a goose egg. There were no adhesions, but the entire growth was deep in the pelvis, and was delivered with considerable difficulty. I had intended to do a complete hysterectomy, but owing to the time consumed in delivering the tumor and cysts, it was thought best to use the serre-neude, which, however, did not control the hemorrhage, and in tightening the wire the instrument slipped clear of the pedicle, so that finally total extirpation became necessary. Complete hysterectomy was performed, and the field of operation closed in by flaps dissected from the anterior and posterior surface of the tumor. The entire pelvis was closed, save the two stumps of the ovarian arteries on each side. These were left exposed and protruding into the general peritoneal cavity.

The operation consumed an hour and three-quarters, and, notwithstanding the time and the loss of blood, the patient left the table with a pulse of 108, and, considering the attending circumstances, was of very fair volume. The temperature did not exceed 100.5° F., and the pulse did not reach 100 after reaction was established. The stitches were removed on the eighth day, primary union having taken place throughout. The post-operative course was absolutely devoid of complication. The tumor in this case weighed about five pounds.

MEDICAL PROGRESS.

Appendicitis at One Year.—TAYLOR reports in the *Boston Medical and Surgical Journal* of May 27, 1897, a case of appendicitis occurring in a child one year old. The attack began with vomiting and pain, but the diagnosis was not made at first, and operation was not performed until the fourth day. An incision was made in the median line on the supposition that there was an intestinal obstruction. The abdomen contained a large amount of thin pus, and through a second incision the appendix was removed and the abdomen flushed with boiled water. Death occurred in eight hours.

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[1] Read before the Louisville Clinical Society.

Cases of Peritonitis in Children Caused by the Pneumococcus.—In *La Presse Medicale* of February 27, 1897, is an article on the above subject by BRUN. It is of assistance in helping to clear up the complicated and still obscure subject of peritonitis. Brun describes three cases occurring in children, which, with two previously described by himself, and others described by Sevestre, Galliard, Moizard, and Kirmission (fourteen in all), make up a clinical and anatomic picture sufficiently characteristic to render a diagnosis fairly easy. Of these fourteen cases in which the diagnosis has been confirmed by bacteriologic examination, eleven occurred in girls. In all of the cases the peritonitis was encysted and situated below the umbilicus. It began, as all cases of acute peritonitis begin, by severe abdominal pain, fever, vomiting, and with diarrhea. This storm soon passed over, and as the fever assumed the type seen in suppuration, there was observed above the pubis and in the iliac fossæ tumefaction with dulness, sometimes with fluctuation. This localization is almost pathognomonic, especially when accompanied, as it was in at least nine of the fourteen cases by a smoothing out (*deplissement*) or by fistulization of the umbilicus. In a case recently seen, by not heeding this smoothing out of the umbilicus, Brun mistook a case of pneumococcic peritonitis for appendicitis.

The prognosis after operation is good. Of these fourteen cases, eleven patients recovered, ten after laparotomy, and one without operation with discharge of pus through the umbilicus and vagina. In several cases the operation was no more than the opening of an abscess.

With reference to the etiology of this disease little is known. The diplococcus lanceolatus is often found in the uteri of young children, and the fact that so many of these cases have occurred in girls excites a suspicion that the cocci have found their way through the tubes or walls of the uterus into the peritoneal cavity, but as yet this is nothing more than supposition.

THERAPEUTIC NOTES.

For Hemorrhagic Metritis.—

℞ Fl. extract of ergot . . . . ℥ i
Fl. extract of hamamelis } aa . ℥ ss.
Tr. cinnamon }
M. Sig. A teaspoonful every two hours.—*Chase.*

Mixture for the Treatment of Streptococcic Sore Throat in Children.—

℞ Tincture of strophanthus } aa . m. x
Anisated spirit of ammonia }
Distilled water . . . . . ℥ iiss.

M. Sig. A teaspoonful every two or three hours (for children from ten to twelve years of age).—*Professor von Widerhofer.*

Vertigo in Arteriosclerosis.—GOARCON (*Rev. de Therapeut.*, April 15, 1897) recommends the following prescription for the vertigo which so often accompanies sclerotic arteries:

℞ Iodid of soda . . . . . ʒ ii
Distilled water . . . . . ℥ viii.

The dose is one or two teaspoonfuls three times a day. The unpleasant taste may be masked by syrup of bitter-orange peel, or by milk. Hygienic treatment should accompany the medical treatment. The patient should avoid mental or physical over-exertion, should live as much as possible out of doors, should eschew a too-exclusively meat diet, piquant sauces, fish, pastry, etc. Alcoholic liquors and tobacco should be absolutely forbidden.

Epithelioma of the Face Cured by Injections of Methyl Blue.—DUBARRY (*Rev. de Therapeut.*, April 15, 1897) reports a case of epithelioma of the chin cured by interstitial injections of a ten-per-cent. aqueous solution of methyl blue. At first an injection of twenty-five minims was made every two days. Later the amount was decreased, and only one or two injections were made during a week. The entire period of treatment was six months. The tumor atrophied, and at the end of the period of treatment only a fibrous cicatrix remained. Eight months later there had been no recurrence.

Mineral Waters in the Treatment of Pulmonary Emphysema.—CAZAUX (*Rev. de Therapeut.*, May 1, 1897) speaks of the advantage to be obtained in certain cases of emphysema by the use of mineral water. Naturally, relief would be expected only in those cases in which the dilatations include a few acini with the preservation of a considerable portion of the elastic fiber. In emphysema of this character, especially if it is of a bronchitic origin, relief, and in many cases absolute cure, may be confidently expected. Such cure is produced in two ways: (1) by a modification of the bronchial mucous membrane, putting it in a condition to resist external changes of temperature; (2) by restoring the conductility of the elastic fibers upon which normal expiration depends. In arthritic subjects mixed bicarbonate waters are indicated, while patients of arthritic temperaments suffering from catarrhal asthma should take waters containing sulphur or soda, either alone or combined with metallic sulphids.

Novel Method of Irrigation in Empyema.—ZEMAN (*Rev. de Therapeut.*, May 1, 1897) has treated a number of cases of empyema with fistula by warm baths. If the fistulous opening is below the level of the fluid, it is evident that if the patient inspires and expires freely there will be a current of water into and out of the pleural cavity much stronger than can be obtained by simple irrigation. Clumps of coagulated blood and fibrinated masses are by this means washed out which could not have been obtained by simple lavage. The baths were given in boiled water cooled to the temperature of the body, and lasted ten or fifteen minutes. The general condition of the patients was much improved, and no accident was observed to follow this treatment.

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OF MEDICAL SCIENCE.

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SATURDAY, JUNE 19, 1897.

THE NEW YORK UNIVERSITY BELLEVUE HOSPITAL MEDICAL SCHOOL.

THE announcement made in last week's MEDICAL NEWS that the consolidation recently entered into by the University Medical School and the Bellevue Medical School for the purpose of organizing a medical department of the New York University had been annulled, is authoritatively confirmed.

The announcement of the consolidation was welcomed by all who are interested in the progress of medical education. The possibilities that presented themselves in the organization outlined by its promulgators tempted the imagination to grand flights in anticipation of what the future held in store, in the realization of a magnificent medical institution that would surpass anything yet contemplated. All these dreams have been dissipated, and affairs seem to have been restored to the *statu quo* previous to the attempted consolidation. The responsibility for the final steps that led to the separation is not difficult to place, but the original basis of the misunderstanding is doubtless to be found in the failure on the part of both parties to thoroughly comprehend the difficulties inherent in the consolidation of two old-time friendly but vigorous rivals. The proceedings had not reached a stage of advancement that would prevent Bellevue withdrawing with honor from the contemplated agreement; and this is what has occurred, the step having been taken at the formal solicitation of the representatives of the University Medical School.

With this brief interregnum in her existence, Bellevue is, therefore, again free to take up her career at the point at which the interruption came and go forward with the enlarged plans contemplated after the disaster by fire which befell her building in March last. The *entente cordiale* existing between the two institutions seems to have been strengthened rather than disturbed by the intimate contact necessitated by the consideration of the serious questions involved.

TWO CONGRESSES.

ONE month ago there were in session, under the shadow of the National Capitol, two bodies with singularly similar titles. Both were "Congresses," one the Congress of Physicians, the other the Congress of statesmen or politicians, both popular bodies, both concerned with the advancement of the good of the public in general—and of themselves in particular, incidentally. In both the members were supposed to be picked men, chosen on account of their skill and experience, in matters pertaining to their special spheres.

But here the resemblance abruptly terminates, and it is not to the discredit of the medical body that it does so. To the casual observer who watched them both at work, the contrast was most striking. One met three times a day, and every session was crowded with productive work; the other met twice a week to devise ingenious and entertaining methods of killing time and solving the great classic problem of "how not to do it." In the one the proceedings were dignified and impressive; the speeches, from the broad and thoughtful address of the President to the superb discussion upon the metabolism of the ductless glands, were of marked ability and vigor, every statement that of an expert, and the whole atmosphere that of courteous, but keenly critical, attention and interest. In the other was a Babel of confusion and boredom, of hand-clapping, paper-rustlings, audible expectorations, hands in pockets, feet on desks, eyes on ceiling, while every speech displayed an ignorance of the simplest facts and most primary principles of finance, of economics, of taxation, and of international law. The proceedings of the one were eagerly perused and the decisions respected and recognized as high authority by the entire profession which it represented; every movement of the other was regarded with suspicion bordering upon contempt, and a sigh of relief will be breathed by the vast mass of its constituents when it finally adjourns.

The differences between the two bodies are real and striking, and we have a right to inquire the reasons for them.

In the Congress of Physicians and Surgeons we have a body of some six hundred men, selected from every part of the Union, including in its ranks a considerable portion of the great leaders of professional thought, and representing a constituency of about 75,000 medical men, and yet not one of them is a member of the National Congress, even by chance. More than this, scarcely a single one of the constituency whom they represent is to be found in the political body, and we doubt very much whether the majority of those gathered together in Washington have a particle of influence, and in many cases even an acquaintance, with those who are supposed to represent them in the sister body.

The late Congress of the American Association for the Advancement of Science, and the Association of Charities and Corrections as well, disposed of its executive and personal business in a couple of half-hour executive sessions, and reserved eight-tenths of its time for the genuine purpose for which it assembled, while in either house of Congress days and weeks are wasted in sparrings for personal advantage, private bills, special pensions, and schemes of personal plunder generally. This is due largely to the caliber and character of the men of which the different bodies are composed.

In our own particular realm, we have just had a most unpleasant experience with the medical incompetency of the National Congress, in its unwillingness to consider and utter inability to appreciate the importance of the appointment of a National Department of Public Health. Nor is it simply its refusal to agree with the almost unanimous wish of the profession in regard to this matter that is most striking, for that might be based upon good and sufficient reasons of economy or policy, but it is its hopeless ignorance of, and barbarous indifference to, the really vital principles involved. There has never been even a shadow of an attempt to discuss the question upon its merits. The impression seems simply to prevail that the scheme has "nothing in it," and hence it does not interest Congress.

As to the scientific incompetency of the National Legislature, we have a still more striking instance, in the question of the bigoted, reactionary laws upon the subject of animal experimentation which is now pending and against which there seems not a single member with either the knowledge or the courage to raise his voice.

The great realm of sanitation, of preventive medicine, is opening up more and more widely every day, and "our duty to our patients," in this, the nineteenth century, absolutely demands that we should go into the halls of the legislature, into the municipal council-room, into the State and National cabinets, just as much as into the hospital, and into the sick room. Not from any petty desire on the part of the profession to be "represented" or get its share of "recognition," but for the best interests of the whole community, and of those who are committed to our care. The only things which keep us from it are: first, that degrading old tradition in the community that a doctor has practically no political rights. The other obstacle is our own indolence and indifference, or worse, a selfish absorption in our own interests and cowardly fear of making enemies or losing reputation. But our end is not to be attained by a mere willingness to accept a nomination to Congress, or by urging ourselves for cabinet positions, but by hard, prosaic, unremunerative, often thankless work by each one of us in his own precinct, his own ward, his own county. An intelligent and disinterested element in any community is bound to win if it will only set itself to work. And if we, in combination with the truly patriotic and thoughtful men of other fields and professions, could succeed in returning to Washington a body as able, as upright, as dignified, and as truly representative as the body which has recently closed its sessions in the halls of the Columbian University, we should have done more for the general progress of the race than by any other one movement in which we could have taken part. And, from a purely professional standpoint alone, the gain in comfort, health, and longevity to our patients would be greater than from even the discoveries of a Koch, a Metschnikoff, or a Lister, and just as genuinely legitimate an aim of true medical ambition.

OBITUARY.

DR. WILLIAM T. LUSK OF NEW YORK.

We regret to announce the sudden death from apoplexy of Dr. William T. Lusk at his home in New York on Saturday, June 12th. The news came with painful surprise to all his friends. He had been in his usual health up to the time of the attack and was engaged in packing his satchel preparatory to spending Sunday with his family in the country when the summons came.

Dr. William Thompson Lusk was born in Norwich, Conn., May 23, 1838. He entered Yale College in 1859, but during his sophomore year he left to enlist in the army. Entering a New York regiment as a private, he displayed so much force of character that in three years he rose to be assistant-adjutant general. He then retired from the army, came to New York, entered upon the study of medicine, and was graduated from Bellevue Hospital Medical College in 1864. He immediately went abroad and spent four years in study at Edinburgh, Paris, Vienna, Prague, Heidelberg, and Berlin. He was professor of physiology in the Long Island Hospital Medical College from 1868 to 1871, and lecturer on the same subject at Harvard Medical School in 1870–71. During these few years he gained the reputation of being a brilliant physiologist and a most interesting lecturer. In 1871 he was elected to the Professorship of Obstetrics and Gynecology at Bellevue Hospital Medical College, which position he retained to the time of his death.

In entering upon this new field of labor, Dr. Lusk threw all the energy of his enthusiastic nature into the study of obstetrics as his chosen life work. His reputation as a teacher and a master in this branch of medicine became world wide, and his text-book on the "Science and Art of Midwifery" was hailed as the best treatise on the subject that had ever been published. It has been translated into the French, Italian, and Spanish languages, and has recently been adopted as a text-book in the Medical School of London. The interesting style of the book, the clear exposition of the subject, and the rational and logical treatment therein set forth will signalize it as a classic for many generations.

Dr. Lusk was a pronounced conservative, indeed he was rather timid in his proving of new remedies and surgical procedures. In this respect he exerted a wholesome influence upon the profession, especially at times when waves of surgical epidemics threatened to obliterate all treatment save that by surgical means.

To those who knew him well, Dr. Lusk was a man of warm impulses, of strong attachments, of a sweet spirit, and a lovable nature. To his patients he was not only the man of science, but the warm and sympathetic friend, whose coming was always welcome, and whose words of sympathy accomplished their object for they were always genuine. His life was as open as a book. He always said what he felt and felt what he said. His words were devoid of diplomacy, and in his conduct finesse had no place.

Dr. Lusk leaves three daughters and two sons. The eldest son, Graham Lusk, is Professor of Physiology in Yale University. The younger son, Dr. W. C. Lusk, was associated with his father in his practice. He is Assistant Demonstrator of Anatomy in Bellevue Hospital Medical College, and Visiting Physician to the Workhouse and Almshouse on Blackwell's Island.

DR. J. LEWIS SMITH OF NEW YORK.

Dr. J. Lewis Smith died suddenly of apoplexy in the seventieth year of his age at his home in New York, June 9th. He was born in Onondaga County, New York, October 15th, 1827, his father being the Hon. Lewis Smith, a direct descendant of John Smith, one of the founders of the New Haven Colony. His early education was obtained in the public schools, which at that time were of an inferior grade. He prepared for college at the Cortland Academy of Homer, New York, one of the foremost preparatory schools of the country, and entered an advanced class of Yale College, graduating in the same class with President Timothy Dwight. He began the study of medicine with Dr. Caleb Green of Homer, N. Y., Professor of Materia Medica in the Geneva Medical College. He afterward became a student of the elder Austin Flint and Frank H. Hamilton of Buffalo, and attended a course of lectures in the Buffalo Medical College. In 1851 he came to New York, and was graduated from the College of Physicians and Surgeons in 1853. He located in practice in the same year, and was appointed Curator to the Nursery and Child's Hospital in Lexington Avenue, where he made his first studies in the pathology of the diseases of children. In 1854 he determined to make the diseases of children his special field of investigation and practice.

His first publication was entitled "A Review of Epidemic Smallpox as it Prevailed in New York City at Different Periods During the Last Fifty Years," *New York Journal of Medicine*, July, 1854. He was also the author of the following contributions: "Report of a Case of Hydrophobia, with Statistical Observations," *New York Journal of Medicine*, September, 1855, and continued in the same journal for January, March, and May, 1856; "Remittent Fever in Children," *New York Journal of Medicine*, January, 1857; "On Infantile Pneumonia," *New York Journal of Medicine*, March, 1857; "Post-Mortem Appearances in Eleven Cases of Cholera Infantum," *New York Journal of Medicine*, July, 1857. From this time until his death he contributed upward of one hundred papers to the various medical periodicals on diseases of children. He also made large contributions to the following works: Ziemssen's "Cyclopedia of Practice of Medicine," Ashhurst's "International Encyclopedia of Surgery," Starr's "Diseases of Children," Keating's "Cyclopedia of Children's Diseases," Sajous' "Annual," Pepper's "System of Practice of Medicine," "Reference Hand-Book," etc.

He held the following appointments: Curator to the Nursery and Child's Hospital, Physician to the Northwestern Dispensary, Visiting Physician to the New York Infant Asylum, Visiting Physician to the Charity Hospital, Visiting Physician to the Infant Asylum on Randall's Island, Visiting Physician to the New York Foundling Asylum, Consulting Physician to the Nursery and Child's Hospital, Second President of the American Pediatric Society, Professor of Diseases of Children in Bellevue Hospital Medical College.

The first edition of his work on "Diseases of Children" appeared in 1869, and since that date eight editions have been published at intervals varying from two to four years.

RESOLUTIONS ON THE DEATH OF DR. J. LEWIS SMITH.

June 11, 1897.

WHEREAS, The Medical Board of the New York Foundling Hospital has lost by death its oldest member, Dr. J. Lewis Smith, who for twenty-five years was Visiting Physician to the Institution, be it

Resolved, That it record this tribute to his memory:

His fame and faithfulness were ever devoted to the interests of this Institution.

Resolved, That this Board attend the funeral in a body; that a copy of these resolutions be spread upon the minutes and forwarded to the current medical periodicals, copies of the same being sent to the family of the deceased.

(Signed) JNO. J. REID, M.D., President.
W. P. NORTHRUP, M.D., Secretary.

ECHOES AND NEWS.

Enclosed Street Cars.—The New York Board of Health has passed an order requiring every street car line to run at least one enclosed car in every four.

Color of the Eye Indicative of Character.—One of the most curious results of the investigations made by doctors in the Russian jails is the statement that each group of criminals has its own peculiar color of the eye.

Leprosy in the Sandwich Islands.—Private advices from Honolulu report that leprosy is spreading with alarming rapidity in the islands. Formerly it was confined almost entirely to the natives, but now many whites are falling victims to the disease.

Vaccination and Tuberculosis.—The official *Reichsanzeiger* of Berlin published June 11th the decision of the Royal Scientific Medical Commission appointed to investigate the question whether vaccination against smallpox produces a disposition to tubercular disease. The commission finds there is no proof of such a disposition upon the part of vaccination against smallpox.

Meat Inspection in Rome, N. Y.—The Board of Health has adopted a rule requiring all persons selling meat to butchers in that city to have it inspected by the Meat and Milk Inspector, and marked with a white tag when first-class and with a red tag when second-class. A fine of not less than $10 is to be imposed for a failure to do this, and a similar fine imposed on butchers who expose meat for sale not properly marked. The rule takes effect at once, and the public is cautioned to see that the meat it buys is tagged.

Experts in Leprosy.—At the international leprosy conference to be held at Berlin on October 11th, Dr. Hutchinson of London will lecture upon alimentation and leprosy. Professor Virchow will discuss the pathologic anatomy of leprosy. Dr. Neisser of Breslau will deal with the origin of the disease, and Dr. Besnier of Paris will treat of its etiology. Professor Koch will discuss the question as to whether the disease is infectious. Drs. Kitasato of Tokio, Mauritz of Hawaii, During of Constantinople, and other eminent experts will attend.

New York Medical League.—A certificate of incorporation of the New York Medical League was filed with the Secretary of State at Albany, June 10. It proposes to unite fraternally physicians in good standing for mutual protection, and to advance the best interests of the medical profession. The trustees are Drs. Gustave Scheler, Douglas H. Stewart, E. Eliot Harris, John C. Schminck, Joseph E. Messenger, Frederick R. Sturgis, J. Smith Peterson, G. T. Harrison, Geo. D. McGauran, A. W. Warren, and Wm. J. Lamer of New York City.

Sending the Leper Back.—Mrs. Sansoni, the leper, who has caused so much trouble for Allegheny and Baltimore health officials, will be sent back to Allegheny in spite of that city's protest. It is said that the Baltimore officials are preparing a special car for her transportation. It will be a steel freight car, fitted up as comfortably as possible, and it is to be sealed until it reaches its destination. It is to be hoped that the international leprosy conference will settle the question of the communicability of leprosy. For a "non-infectious disease" it has already caused enough terror in the world.

Opening Day at Robin's Nest.—One of the most deserving of New York's many charities had its annual opening on the 12th inst. In addition to the many friends and patrons from the surrounding country—Tarrytown, Irvington, and Dobbs Ferry—several representative men from New York were present to lend encouragement, give statistics, and wish the young ladies, who so nobly support this charity, Godspeed. Thousands of little ones in New York are benefited annually by the work of the Robin's Nest. Children from St. John's Guild Hospital and Hospital for Ruptured and Crippled are cared for during the entire summer gratis.

Favorable Report on Diphtheria Antitoxin in London.—The report of the medical superintendents to the Metropolitan Asylums Board of London on the use of antitoxin in the treatment of diphtheria during the year 1896 has just been presented. It confirms and emphasizes the favorable conclusions reached in the previous year, when antitoxin was first used. The statistical results with regard to mortality are compared with those for 1894, the year immediately preceding the introduction of antitoxin and the one in which the lowest mortality had been recorded up to that time; they show a marked improvement in all classes of cases, and especially in the severer ones. The inferiority of the results obtained to those presented in the American Pediatric Society is attributed by the English medical periodicals to the inferiority and uncertainty of the antitoxin used.

Knives and Nails in a Man's Stomach.—An extraordinary case was recently reported from Vienna in which various household utensils were found on necropsy in the stomach of a woman. It is reported from Kansas City that a street performer known as the "Human Ostrich," who entertained his audiences by swallowing all sorts of articles, recently suffered so much from the effect of his last feat that he was obliged to submit to gastrotomy for relief. On opening the stomach the following articles were found: One four-bladed knife, 1½ inches long; one two-bladed Barlow knife, four inches long; one knife blade, 3¼ inches long; one knife blade, three inches long; two knife blades, each two inches long; one knife blade, one-inch long; thirty-two eight- and tenpenny fence nails and spikes; thirty-four sixpenny wire nails, sharp pointed; twenty-six shingle nails, each one-inch long; sixteen carpet tacks and small wire nails, one horseshoe nail, three large screws, one barbed-wire staple, and three ounces of fine glass. The man died two days later.

A New Hospital and Dispensary in New York.—There was filed at Albany, June 8th, with Secretary Hebbard of the State Board of Charities, an application for permission to incorporate the West Side Clinic and Hospital Association of New York City. The directors of the proposed hospital are Robert E. A. Borr, Charles G. Judson, S. F. Hayward, Robert Sherman, Drs. Louis A. Queen, Irving Townsend, George A. Shepard, Irving P. Sherman, H. S. Hathaway, F. M. Frazer, E. S. Munson, William H. Vanden Burg, and David Curtis of New York City, and Thomas E. Brown, Jr., of South Norwalk, Conn. In connection with the above announcement of application for incorporation it will be interesting to note what the action of the State Board of Charities will be in view of the fact that the west side of the city is already superabundantly supplied with clinics and dispensaries. It will be further interesting to observe the action of the various medical societies that have been organized for the purpose of curtailing the further growth of the free dispensary system.

The Prince of Wales and Antivivisection.—It is a well-known fact that the irrepressible and narrow-minded advocates of antivivisection have been endeavoring to dragoon the Prince of Wales into some admission that he would not sanction the expenditure of any of the money, collected in behalf of the hospital fund known by his name, upon those hospitals the staffs of which are alleged to perform experiments upon living animals. The Prince has avoided being drawn into the trap laid for him, and the antivivisectionists have taken umbrage and decided to work against the interests of the fund. In his recent speech at the opening of the new school buildings at Guy's Hospital the Prince said: "I have made careful inquiries and have every reason to believe that whenever experiments upon animals are performed in this school, they are undertaken with the object of promoting advances in medicine and surgery which are likely to be of benefit to suffering humanity, and I have satisfied myself that such experiments are conducted under strict supervision by highly qualified investigators, and that in practice the only operations performed upon animals which are not in a condition of complete anesthesia are inoculations and hypodermic injections."

CORRESPONDENCE.

THE INTERNATIONAL CONGRESS AT MOSCOW.

To the Editor of THE MEDICAL NEWS.

DEAR SIR: The undersigned Chairman of the American National Committee, which was established at the request and under the authority of the General Committee of the Twelfth International Medical Congress, begs to inform the numerous gentlemen who are constantly applying for information concerning certificates, trips, fares, hotels, etc., that he has none to give, not having heard from the General Committee these two months.

Very respectfully,
(Signed) A. JACOBI, M.D.

NEW YORK, JUNE 14, 1897.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

NEW CLINICAL AMPHITHEATER OF THE MEDICO-CHIRURGICAL HOSPITAL—PHILADELPHIA COUNTY MEDICAL SOCIETY—PHILADELPHIA PATHOLOGICAL SOCIETY—GRADUATION EXERCISES OF THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF PENNSYLVANIA.

PHILADELPHIA, June 12, 1897.

THE construction of elaborate operating-rooms by the hospitals of Philadelphia has of late become so common that it arouses but passing attention, unless one of these structures happens to be of a particularly elaborate nature, involving a large expenditure of money, and the embodiment of many extremely advanced ideas. A building of this kind, for it has cost a large sum to erect, and certainly comprises every modern detail in its construction, is the one recently completed by the Medico-Chirurgical Hospital, which was open for inspection during the late meeting of the American Medical Association in this city. The exterior is in the Renaissance style of architecture, with a base of brownstone supporting a superstructure of terra cotta and Pompeiian brick. Marble tablets inscribed with the names of Hippocrates, Galen, and Celsus on the one hand, and of Lister, Pasteur, Koch, Agnew, Goodell, Pancoast, and Gross on the other are placed below the large arched windows of the front of the building.

The operating amphitheater, with rows of individual seats for five hundred students, is floored and wainscoated with marble, plastered with a thick enamel finish, and lighted by a large sky-light to the north. By means of a system of pipes encircling it, the whole room may be completely flooded with a large volume of water, which is carried off by ample drains at its base, Adjoining the arena are rooms for the storage and cleaning of instruments, for pressure sterilizers, for dressings, and for private operations. An important feature of the building is the heating and ventilating plant, insuring a free circulation of filtered fresh air, heated to any desired temperature, and, in the amphitheater, delivered through apertures beneath the students' seats, and removed through large exhaust ventilators. Taking the building either as a whole, or considering it in detail, it must strike the observer that the claims of its projectors and friends that it is the finest in the world must be regarded as substantiated.

The last stated meeting of the Philadelphia County Medical Society, held on June 9th, was devoted to the consideration of the treatment of high myopia; and two interesting papers on this subject were read, one by Dr. T. B. Schneideman, on "The Proposed Operative Treatment of High Myopia," and the other by Dr. Edward Jackson, on "The Treatment of Very High Myopia." Dr. Schneideman's paper dealt with the results claimed by various foreign ophthalmologists in removing the crystalline lens for the correction of this condition, and gave a succinct review of the opinions held by these operators. After discussing the faults and discomforts of concave lenses of high correction, and their impracticability for general use, he described the technic of the operation, and spoke of the good results attending this procedure, such as clear vision without a lens, improvement in visual acuity, cessation of the myopia, and restoration of binocular vision. Dr. Jackson's paper maintained that in the majority of cases of very high myopia the operative treatment should not be considered, and that the removal of the crystalline lens was not attended by such freedom from risk as the European operators claim. He advocated the use of high correcting glasses, and showed the fallacies in arguments against their employment, although admitting the field of usefulness of the operative treatment in a small number of cases in which other means of treatment prove inefficient. In closing, Dr. Jackson urged that the condition be prevented by early attention to the care of ordinary myopia.

In the joint discussion of these papers, Dr. W. L. Pyle explained that the very limited abilities of most Continental opticians in the mechanical execution of lenses probably would account for the preference of foreign ophthalmologists for the operative treatment of high myopia, rather that its correction by glasses, but that this condition did not exist in this country, thanks to the skill shown by American opticians. Dr. J. P. Thorington thought that in view of the personal equation which must enter into the consideration of every case of myopia, one could not arbitrarily recommend either a high or a low correction as the best treatment; but he preferred to employ full correction in cases not exceeding 6 D. Dr. S. Lewis Ziegler said that he would rather prescribe a full correction for distance, with a modification for the reading glass.

At the last meeting of the Philadelphia Pathological Society, held on June 10th, Dr. W. M. L. Coplin showed some interesting specimens, both gross and microscopic, from a case of cirrhosis of the liver, this organ being uniformly "hobnailed," extensively atrophied, and showing marked evidences of capsulitis; microscopically there were seen areas of inflammatory interlobular exudate, and signs of a probable septic infection. Dr. Coplin also showed specimens illustrating hepatic cirrhosis in a pig; the animal had been fed for a long time on buttermilk, which contained a small percentage of alcohol, and to this fact the speaker was inclined to attach a questionable etiologic import.

Dr. Joseph Sailer showed several specimens of degenerative changes in the nerve-cells, and described minutely the alterations in nucleolus and protoplasm constituting the condition. He took the ground that nerve-cell degeneration was not characteristic of any particular disease, but was only an evidence of some pathologic change.

A specimen of a kidney with double ureter was presented by Dr. Frank White, who detailed the history of the case, and demonstrated the pathologic condition.

Dr. J. Dutton Steele showed a tuberculous kidney, with involvement of the ureter down as far as the bladder, and infiltration of a part of the latter viscus. He was inclined to consider the case one of possible primary renal tuberculosis, although stating that the patient from whom the specimen was obtained also had a tuberculosis pneumonia, and old apical adhesions.

The graduating exercises of the Class of 1897 of the Medical Department of the University of Pennsylvania were held in the Academy of Music on June 9th, in conjunction with the other departments of the University. Dr. John Marshall, Dean of the Department of Medicine, conferred degrees upon 147 graduates—the largest class of all the departments; the Faculty Auxiliary to Medicine granted certificates to a number of others, who had completed courses in medical jurisprudence and other branches. A large number of prizes were awarded for general excellence, and for the best examinations in the various branches of medicine.

OUR VIENNA LETTER.

[From our Special Correspondent.]

THE EXISTENCE OF THE GERMAN UNIVERSITY OF PRAGUE THREATENED BY LEGAL REGULATIONS AS TO THE USE OF THE BOHEMIAN LANGUAGE—AN ATYPICAL CASE OF DIABETES—DIABETES AND THE INTERNATIONAL CONGRESS AT MOSCOW—TRACHOMA ENDEMIC IN MANY PARTS OF HUNGARY—A BULLET IN THE FEMUR FOR EIGHTEEN YEARS, AND CHRONIC LEAD POISONING.

VIENNA, May 24, 1897.

DURING April a law was passed by the Austrian legisture for the regulation of the language to be used in the transaction of business, official and legal, in Bohemia. In accordance with the temporizing, conciliatory spirit which has characterized the attitude of the central government in Austria toward the provinces since Count Taaffe's ministry, some ten years ago, the new law makes the use of Cjeckish or Bohemian obligatory in legal matters. This would be of no interest to the world in general, though it might be looked upon as a step backward in culture to further encourage the use of a Slav tongue where German is gradually acquiring supremacy, were it not that this law threatens to injure very seriously the German University of Prague.

As a concession to Bohemian National feeling about eight years ago a Bohemian University was established in that city, and this of course has taken many students from the German University. As the new law makes it necessary for anyone who holds an official position to know Bohemian, students from even German parts of the province will now find it advisable to pursue their studies in that language. The faculty of the German University, at a meeting held May 12th, signed a formal protest to the Imperial government declaring that this law, if enforced, will mean the practical annihilation of their University. As the German University of Prague is the oldest of the German universities in Europe, and has always been widely known for its broad scholarship and thorough, progressive, scientific spirit it seems too bad that it should be the victim of the narrow, short-sighted policy of a government which yields to party and sectional feeling without consideration for scientific progress.

The medical world would seriously miss the work which has been done at Prague if it were to be blotted out, and yet it is almost to be blotted out for the future if it is to be known only through the shadowy medium of the Cjeckish tongue, and such abstracts from it as may occasionally find their way into German. Good sense and better judgment will surely prevail in government councils and keep them from sinning so grieviously against progress as to look for the reintegration from narrow supposedly National feeling of a language which possesses no literature, and which practically shuts out those who employ it exclusively from the circle of European intercourse.

At the last meeting of the Vienna Medical Club Dr. Kolisch presented a very interesting atypical case of glycosura or diabetes. The patient, a girl of twenty, was passing urine which contained from five to eight per cent. of sugar. There was no doubt that this was grape sugar. The condition was accompanied by none of the usual symptoms of diabetes—no polyuria, no polydipsia, no loss of weight, or notable increase in appetite, and there was a general sense of well being, in marked contradiction to what might have been expected under the circumstances. Closer study of the cases only made the anomalous character of the glycosuria clearer. An absolute diet consisting only of fat and albuminous material did not cause the disappearance of sugar from the urine. Yet when the glycosuria was at its maximum no excess of sugar could be demonstrated in the blood. The urates were not increased in the urine at any time, and a careful examination of all excretions showed that metabolic processes were not using up more material than was ingested. The patient was in a good state of "nitrogenous equilibrium" with the balance slightly in her favor, so that the absence of the loss of weight, of polydipsia, and of bulimia was readily explained. There was absolute accretion of material rather than waste.

Dr. Kolisch is not sure that he may not have to do with a beginning genuine diabetes latens or insidiosus. Several such irregular types have been reported, but this case does not seem to conform to any of them. The absence of hyperglykemia, *i.e.*, increased amount of sugar in the blood at times when large amounts of sugar are being excreted would seem to indicate a sugar excretory function (or lesion ?) of the kidneys. For the series of symptoms observed in the case—glycosuria, without azoturia, polyuria, and hyperglykemia—the name "tachyglykuria" is suggested. The significance of the symptoms as was pointed out, is like that of many other metabolic anomalies, a mystery, and must remain so until a more thorough knowledge of organic functions will enable us to better understand metabolic processes generally.

With regard to diabetes, there seems to be nearly everywhere an air of expectancy as to what the very near future will reveal. Two of the men who in very recent years have added most to our knowledge of the disease, Lépine and Minkowsky, are to read papers on "Forms of Diabetes" at the International Congress at Moscow. The contributions are confidently expected to clear up some disputed points in the physiologico-pathologic groundwork of the disease, and especially to add to our knowledge of the causes and conditions obtaining in diabetic coma.

From Vienna some interesting developments in connection with diabetes, from the clinical and diagnostic standpoints, are looked for. That the symptom-complex of diabetes is not an anatomic or etiologic unity has long been conceded; that it is also not a clinical symptomatic unity is becoming clearer and clearer, though this has long been the accepted teaching. More exact diagnostic methods as to the urine and blood contents, not only as regards sugar, but especially for other abnormal materials are to be demonstrated, and the diagnosis of progress of the disease toward its fatal termination in coma made available for the practitioner for prophylactic purposes.

A recent official report from Hungary reveals the existence of a very unfortunate state of affairs there with regard to the contagious eye diseases. At the end of last year there were over 30,000 cases of trachoma in that country. The affection is practically endemic in certain of the lowland provinces, as Donan and Theiss, but has not spared even the high mountainous districts. Attention is called to the liability of contagion where men associate without proper precautions. As immigration in these later years have brought to the United States many of these people who huddle together in our mining regions without the simplest hygienic precautions, the necessity for watchfulness in the matter is evident. The germs of the disease are already present, and if the salubrious air of the Hungarian mountains, and the rugged health of the mountaineers, have not availed to protect them in their native land the gradual spread of the disease may be looked for under less favorable conditions with us.

The *Wiener Medicinische Zeitung* for May 18th contained an account of the removal of a bullet from a femur, which had been lodged there since the last Turkish war. The interest of the case lies in the fact that all the symptoms of chronic lead poisoning had developed, and absolutely nothing was effectual in relieving them until the bullet was removed. It had been in place for about nineteen years, and had given rise to a fistula which has been continually discharging pus from the very beginning. It was probably the persistent presence of these secretions that prevented the bullet from becoming encysted and brought about the continual absorption of sufficient quantities of lead to give rise to typical lead colic, the blue line on the gums, obstinate constipation, chronic indigestion, and serious anemia. All of these symptoms disappeared after the removal of the ball, and the patient now, two years after the operation, is in excellent general health. The number of cases on record of lead poisoning from the presence of bullets in the body is rather small, and they always seem to have been accompanied by the fistulous discharging condition that occurred in this case.

TRANSACTIONS OF FOREIGN SOCIETIES.

Berlin.

SURGICAL TREATMENT OF ULCER OF THE STOMACH—SURGICAL TREATMENT OF DIFFUSE PERITONITIS—USE OF MURPHY'S BUTTON IN GERMANY—NUTRITION AND INTESTINAL PUTREFACTION—PYELONEPHRITIS IN CHILDHOOD.

AT the twenty-sixth congress of the German Society of Surgery held in Berlin from April 21st to April 24th, V. LEUBE read a paper on *the surgical treatment of ulcer of the stomach.* By careful attention to the minutest details of non-operative treatment ninety-six per cent. of the cases of ulcer of the stomach can either be permanently cured or much improved. Less than two per cent. are treated without benefit. and two per cent. of the patients die. These figures are given as the result of experience with over a thousand cases treated by the author during the last ten years, by rest in bed for at least ten days; the application of poultices as hot as can be borne, the poultices being changed every ten minutes for ten days; the daily ingestion of lukewarm Carlsbad water, and the most carefully regulated diet for a period of some weeks.

Leube gives as indications for operation: (1) Small but continuous hemorrhages. (2) Pain and vomiting which the treatment above fails after several weeks to relieve. (3) Perigastritis as the result of adhesion, although the non-operative treatment is first to be tried. (4) Perforation into the abdominal cavity. As recovery in this complication is only possible when the stomach is empty, and is even then rare, operation should be performed immediately. Practically the same indications for operation were given by MIKULICZ: (1) When the life of the patient is threatened directly or indirectly by hemorrhage, perforation, or starvation. (2) When thorough medical treatment gives little or no result and the patient's pleasure in life is taken away by his suffering.

KOERTE warned against operation in cases of profuse hemorrhage. In one such case it was found that the ulcer had eaten into the pancreas and finally eroded the splenic artery. In another case the blood came from a branch of the pancreatico-duodenalis artery.

KOERTE discussed the *surgical treatment of diffuse peritonitis*, basing his conclusions upon a study of ninety-nine cases produced by disease of some organ; in which are not included cases of peritonitis after injury, strangulated hernia, or intestinal obstruction. Puerperal septicemia, carcinomatous, tuberculous, and chronic peritonitis are also excluded. Of these ninety-nine patients seventy-one were operated upon, of whom twenty-five, or thirty-five per cent., recovered. Of the remaining twenty-eight, some were too far gone for operation, while in six, it was not evident that there was any purulent effusion into the abdominal cavity, and the general condition of the patient gave hope of recovery without operation. All of these six patients recovered.

The object of operation is (1) the removal of the exudate in order to limit extension of the infection, and (2) the relief of the abdominal cavity from high pressure, the restoration of the activity of digestion, of the circulation, and of respiration.

Operative interference should be as rapid and as simple as possible. The chief object is the removal of the purulent exudate by irrigation with hot water or by sponging. An antiseptic solution must not be used. If there is a perforation in the stomach or duodenum, it should be closed. For perforations lower down, drainage alone may be used if the opening is not readily accessible to suture. Multiple counter openings are no longer advised.

In the after treatment the strength of the patient should be sustained by rectal injections, intravenous saline injections, and hypodermic stimulation. Gastric lavage and high enemata are also serviceable. Morphin, not opium, should be given to relieve pain.

KOENIG called attention to the fact that most cases of peritonitis following perforation of the appendix are not really cases of general peritonitis, but consist of one or more encapsulated foci of suppuration, while a part of the abdominal cavity remains intact. These, therefore, should not be described as cases of diffuse peritonitis.

ISRAEL, in order to reduce the virulence of the exudate, diminishes abdominal pressure as much as possible by a long crucial incision, which he leaves open. In this manner he has been able to decrease considerably the mortality in such cases.

MARWEDEL referred to the use of *Murphy's button in Czerny's clinic.* Fifty-five operations were performed with its aid. The results were in the main satisfactory, although in three cases the button failed to pass down the intestine, causing perforating peritonitis and death. Brentano, who collected records of 328 anastamoses with the button, found indication of cicatricial contraction in only three cases. Marwedel agrees with Murphy in considering a superimposed suture not only useless, but dangerous.

At the Union for Internal Medicine, session of April 12, 1897, ALBU, in discussing the subject of *nutrition and intestinal putrefaction*, said that no successful attempts to disinfect the intestine have as yet been made. The nearest approach to this is obtained by the use of laxatives, which remove bodily a great portion of the contents which are capable of putrefactive changes. The words "asepsis of the intestinal tract" are nothing more than a phrase, for neither by medication nor by the most thorough use of enemata can one free the intestine from bacteria or the urine from the absorbed products of their action. The flooding of the drug market with so-called intestinal antiseptics is calculated to disgust the serious physician with the use of therapeutic remedies.

At the session held May 3d, BAGINSKY spoke of *pyelonephritis in childhood*, a rare disease, of which he has seen, in one form, four cases. Its characteristic points are an intermittent fever with alternating subnormal and high temperatures, and the varying condition of the urine, which, sometimes, is perfectly clear, and at other times has a fixed sediment. The bacterium coli may be demonstrated in freshly voided urine. In this series of cases there was obstinate constipation, the fecal masses being wrapped in membrane.

In a second form of the disease, four cases of which Baginsky had also seen, the pyelonephritis follows upon a long-continued and wasting diarrhea. This form of the trouble usually ends fatally, and the kidney is found to contain, besides suppuration in the pelvis, small abscesses in the substance, while the tubules swarm with masses of bacterium coli, and may also contain other germs.

London.

VENEREAL TUMORS IN DOGS CONVEYED BY COITUS—RECTAL CONCRETION—RUPTURE OF THE HEART WITHOUT PERFORATION—NON-TUBERCULOUS POSTERIOR BASIC MENINGITIS IN INFANTS—A NOVEL CURE FOR EXTROPHIC BLADDER—TUBERCULOSIS AT AN ADVANCED AGE—RAW MEAT AND HOT WATER IN GOUT.

AT a meeting of the Pathological Society, held April 6th, SMITH and WASHBOURN described a series of *infective tumors occurring in the genitals of dogs*. A dog affected with a tumor on the penis served twelve bitches, of whom eleven became infected. Three of these bitches were then served by a second dog, who developed a growth on his penis. He in turn served two healthy bitches, one of whom he infected. By artificial inoculation a similar growth was produced on the penis of a healthy dog. The tumors commenced as minute papules, growing slowly and becoming at about the end of twelve months lobulated masses, which were easily removed from the underlying tissues, together with the mucous membrane to which they were attached. In one case there was infiltration of the muscular wall of the vagina, and in another the lymphatics of the groin were affected. There was nothing in the microscopic appearance of the tumors to distinguish them from human sarcomata. There was no tendency to spontaneous cure, but if removed at an early age, the tumors did not recur. In two cases the tumors were successfully transplanted, and developed growth in a manner similar to that already described by writers upon the infective nature of cancer.

CRIPPS exhibited a *concretion which he removed from the rectum of a woman aged sixty*, who for fifteen months had suffered from diarrhea, accompanied by fluid stools and mucous. The concretion was so large and hard that it was necessary to divide the anus backward in order to extract it. It weighed eight ounces, and was found to be composed entirely of fecal material.

At the session of May 4th, FOX exhibited the *heart of a stout woman aged sixty-nine which was ruptured, but not perforated.* The patient was seized with precardial pain after a cold bath. Morphin and venesection gave some relief, but forty-eight hours later, after making a slight movement, she suddenly died. The pericardium was found to be filled with blood, and there were two small rents in the left ventricle which did not extend through the whole thickness of the heart's wall. It appeared that the distention of the fatty heart had ruptured the exocardium and some muscular fibers, causing the escape of blood into the pericardium, and death followed forty-eight hours later.

Before the Royal Medical and Chirurgical Society, April 13th, CARR read a paper on *non-tuberculous posterior basic meningitis in infants.* This is a distinct form which has not up to the present time received adequate recognition. It mainly affects the posterior portion of the base of the brain, but is entirely independent of tuberculous meningitis. It runs a subacute or chronic course with fairly characteristic symptoms during life, and has constant and definite *post-mortem* appearances. Carr has seen eleven cases, all occurring in healthy infants under one year old. The onset was sometimes slow, sometimes not so gradual, but in all there were severe vomiting, retraction of the head, and stupor passing into coma, which lasted usually several weeks. The cases all terminated fatally in from five weeks to three months.

At autopsy, inflammation of the pia was found over a definite area at the base of the brain, hydrocephalus, and in some cases closure of the opening between the fourth ventricle and the subarachnoid space. In no instance was there any sign of tuberculous disease in the cranial cavity or elsewhere, and its possible connections with injury, diseases of the ear, congenital syphilis, and epidemic cerebrospinal meningitis were considered and abandoned. In two cases the lateral ventricles were tapped; in one instance with marked benefit. In two other cases trephining proved quickly fatal owing to too rapid escape of the fluid.

At a meeting of the Medical Society held April 11th, HARRISON showed *a boy of fifteen years with extrophy of the bladder, whose right ureter had been brought out through a lumbar incision*, the left kidney previously having been removed. The operation was completely successful. The urine which flowed from the wound was clear and showed no tendency to form phosphatic deposits, and did not irritate the skin.

At the session held April 26th, MARSH called attention to the fact that *tuberculosis in old people is by no means as rare* as a perusal of the text-books would lead one to suppose. He mentioned three cases of Pott's disease with abscess within his own experience in patients aged sixty-nine, seventy, and seventy-four. Other tuberculous lesions which he had seen in the seventh and eighth decades were tuberculosis of the bones and joints, tubercular epididymitis, and tuberculosis of the cervical axillary glands.

ARMSTRONG pointed out the *advantages of an exclusive meat diet in certain cases of chronic gout.* By giving patients nothing but red meat and hot water, it is possible to obtain rapid diminution of abdominal girth, loss of fat and flabby tissue, an increase in the quantity of the urine, and the ultimate disappearance of urates, alkaloids, and toxins from the urine.

At the meeting of the Clinical Society, held April 9th, MARSH described a *sarcoma of the prostate in a patient aged fifty-seven.* The mass grew to be so large that it interfered with defecation. A colotomy was performed, but the patient died. At autopsy the tumor, which measured seven and one-half by four and one-half inches, was found to have displaced the bladder and filled the pelvis. Microscopically, the tumor was a spindle-celled sarcoma.

JOHNSON reported a case in which *axial rotation of a pedicle of an ovarian cyst was met with in a child of five years of age.* Operation was performed, and an uneventful recovery followed.

At the meeting held April 23d, MARSH showed a case of *hydronephrosis in which the collection of fluid was found to be between the kidney and its capsule.* Nothing in the history of the case or in the condition of the parts at operation indicated the cause of the hydronephroses.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

The Semicentennial Meeting, Held at Philadelphia, June 1, 2, 3, and 4, 1897.

SECTION ON PRACTICE OF MEDICINE.

(Continued from page 805.)

THIRD DAY—JUNE 3D.

THE first paper read at the morning session, entitled

SOME OF THE CLINICAL USES OF THE X-RAYS IN MEDICINE

was presented by DR. F. H. WILLIAMS of Boston. During the past year he had had more than 500 cases in which he had used the X-rays, and he had never seen any harm or inconvenience follow its use. His conclusions regarding the results attained by the use of the X-rays were as follows: The normal brightness of the chest is increased in pneumothorax and emphysema, and markedly decreased in tuberculosis and pneumonia. Obscure cases of aneurism can be diagnosed, and pericardial effusion be distinguished from enlarged heart. In tuberculosis and pneumonia the excursion of the diaphragm is limited, while in pneumothorax and emphysema its position is much lower than normal. The normal outlines of the organs may be changed by the presence of abscesses and new growths. The fluoroscope gives evidence of returning health, and more early information as to the advent of pneumonia and tuberculosis. It furnishes the easiest way to ascertain the amount of fluid in the pleural or pericardial sac and shows the amount of displacement of the heart, and in diseases of the heart it is especially serviceable. In some cases the diagnosis can be made by the use of the X-rays alone. As an aid to diagnosis it is in daily use in the Boston City Hospital as an adjunct to the stethoscope. In all cases of doubt the first X-ray examination should be checked by a second. The Crookes' tube should be about two or three feet away from the patient as the shadow on the screen will be too large if the tube is placed closer.

DR. C. L. LEONARD of Philadelphia read a paper on the same subject, entitled

THE APPLICATION OF THE ROENTGEN RAYS TO MEDICAL DIAGNOSIS.

The rays promise to be of especial value in medicine, for they eliminate the factor of personal equation in diagnosis, and replace the mental picture which a physician forms of the condition of internal organs from a physical examination with the more exact skiagraph. The application of these rays to medicine is attended by very many more difficulties than their application to surgery, for in medicine it is necessary to deal with substances the opacity of which is not marked. The stomach, not being opaque and hence not discernible in a skiagraph, means have to be adopted to make it so, and this is accomplished by injecting into it an emulsion of bismuth which coats the walls and renders the organ more opaque than the pelvic bones. Opacity, as used in Roentgen-ray nomenclature, is merely a relative term.

TUBERCULOSIS ANTITOXIN

was the title of a paper read by DR. E. A. DESCHWEINITZ of the Biochemical Laboratory of the Department of Agriculture, Washington. His efforts had been directed toward the production of an antitoxin serum, and his experience had been gained wholly by experimentation upon animals. He had tried injections of tuberculin and also of an antituberculous substance, and of combinations of both. He had found that tuberculin, when injected into horses and cows, produces a substance in the serum which, when injected into animals, protects them from a fatal dose of attenuated tuberculosis germs, or retards their development. But in order to produce this antituberculous substance (whatever it might be) a great deal of time is required, and some of his animals have been under observation for several years, and their serum does not seem to protect animals from tuberculosis any better than it did at first. An antitoxic substance can be produced, but as yet it is small in amount. He hoped that a satisfactory antitoxic substance will soon be obtained, but as yet the treatment is in the experimental stages.

A paper on the same lines, entitled

ANTITUBERCULIN

was read by DR. J. MCFARLAND of Philadelphia.

DR. D. L. ROCHESTER of Buffalo read

A REPORT ON THE TREATMENT OF TUBERCULOSIS.

He had used Edson's aseptolin and Paquin's antitubercle serum, but had not obtained satisfactory results with either. All the patients whom he had treated had bacilli in the sputum, thus confirming the diagnosis of tuberculosis. Aseptolin had been tried for four to six months, and was followed by a subsidence of the sweating, a gain in weight, and an increase of appetite, but the local conditions did not change. The cough and expectoration also were lessened. Four of the patients treated with aseptolin died, one, he believed, because of the treatment, and in no case was there a cure. The improvement noted continued during warm weather while the patients were able to be out of doors, but ceased when cold weather returned. It was true that the sweating was checked, but as this result could be equally well obtained in other and less dangerous ways there was no excuse for using the treatment for this purpose. Paquin's antitubercle serum is worse than useless, for it not only produced no good results, but it caused acute pain at the seat of the injection and produced a severe urticaria. The most satisfactory substance he had yet obtained for the treatment of tuberculosis was the nuclein prepared by Bonn of Ann Arbor. He had yet to see a case in which it did not aid the cure. He had seen some cases in which there had been a cure while taking nuclein, and in all there was improvement.

The conclusions he had reached from his investigations were that nuclein does no harm if the injections are not too rapidly increased; that the injections are not painful. He had seen cases recover, that is, that all signs of the cavity in one lung had disappeared, and in one case the bacilli had disappeared. Another case might also be reported as cured, as the patient felt so well that he neglected treatment. Whatever the form of specific treatment adopted, plenty of exercise should be taken. The treatment should begin by keeping the upper air passages clear. For the dyspnea, which is so frequent, fluid extract of quebracho is the best remedy. For the fever nothing is needed beside the nuclein. Sponging should be persisted in. Sweating will generally disappear with the use of the nuclein, but if not, atropin and aromatic sulphuric acid are the best remedies. For anemia bone marrow should be given.

A FURTHER REPORT ON THE TREATMENT OF TUBERCULOSIS BY IODOFORM INUNCTIONS

was the title of a paper, read by request, by DR. L. F. FLICK of Philadelphia. He now uses europhen instead of iodoform and the result is equally good, while the treatment is much less offensive. Ten cases were reported in the first series as having been treated, and of these one patient was reported as apparently being well, three as approaching a cure, four in which the disease was arrested, and two in which there had been a relapse and the patients were doing badly. It was now eight years since he began treating tuberculosis by this method, and he had now a number of additional cases to report. Of the ten first reported, eight had since died, one was apparently well, and one had disappeared from observation. Of the eight patients who had died, seven had succumbed to tuberculosis and the other to some abdominal trouble, so that the best results he could claim for the treatment was ten per cent. of cures. Of five additional cases hitherto reported three patients had died, one was well, and one had disappeared from observation. Of fifteen patients, eleven had died, two were well, and two had disappeared. Of the two who had disappeared one probably had died and the other probably had recovered. This gave twenty per cent. of recoveries. More recent statistics gave practically the same results. It was unfair, he said, to draw conclusions in regard to a treatment of tuberculosis carried on such a short time, Unless it has stood the test of a number of years it is unsafe to place a remedy upon the list of curative agents.

At the afternoon session the first paper read was by DR. E. B. BORLAND of Pittsburg, entitled

CURABILITY OF PULMONARY TUBERCULOSIS.

Scientific physicians, he said, in the treatment of tuberculosis, should make use of the light which still shines clearly instead of following after false ones. Tuberculosis may be considered a curable disease if treated early and properly, but when it has once impregnated the system nothing is known which can eradicate it. He does not believe in the theory of immunity, for if there were anything in this doctrine the child of an immune mother should be entirely free from all danger, which experience has not shown to be the case. The question then arises: Can tuberculosis be cured; and if so, by what means? If latent tuberculosis is to be cured it must be taken in hand early, but unfortunately this is seldom done at the present day. Nature frequently produces cures of tuberculosis in man, and physicians should endeavor to copy Nature's methods. Among the most essential of her remedies is dry air, but he thinks that altitude probably has little to do with the cure, though it is certainly true that in high altitudes the unused air-cells are called into activity and developed. The condition of the excretory organs should be attended to. Woolen clothing aids the excretory processes, while cotton clothing checks it. Nature clothes all her animals in wool, and only foolish man insists upon wearing cotton fiber. Cod-liver oil and antiseptic inhalations should be used when indicated.

The average life of seventy-seven per cent. of tuberculous patients may be set down as being two years. Strict sanitary methods should be adopted to prevent the spread of the disease. If everybody could be prevented from spitting on the sidewalk, it would do more to prevent the spread of tuberculosis than all of Koch's tuberculin. To-day physicians are lying supinely upon their backs hugging the delusive phantom of a specific instead of making use of the methods of treatment already at hand.

DR. DENNISON of Colorado said that he wished especially to endorse the statement of Dr. McFarland as to what tuberculosis really is. Since there had been some adverse opinions expressed as to the views contained in the papers of Drs. McFarland and Rochester, he wished to say that they were in line with his experiences in Colorado. First of all, he entered a protest against Dr. Cohen's statement, that seeking after a specific for tuberculosis is like searching after a will-o'-the-wisp, and he desired to commend the good work done in this country by Klebs, Trudeau, and Von Ruck in their search for an antitoxin. It seemed almost impossible to him that anything can be proved by using tuberculin on healthy persons, and clinical experience is necessary to test the virtue of any antitoxin which might be obtained. The argument advanced that there is such general infection of the human race with tuberculosis that a certain amount of antitoxin must be present in the blood of all individuals, or all would die, had no bearing on the question of antitoxin. The immunity of tuberculosis is merely a relative immunity. This is to be obtained by building up the individual cells, thereby increasing the powers of resistance. He had used antiphthisin with some success, and he did not think these good results were due entirely to the climate of Colorado, as had been suggested. Of course this climate is a factor in the cure, and altitude is an important element, notwithstanding the assertions of Dr. Borland to the contrary. Rarefaction, of the air, as found in Colorado, leads to increased pulmonary exercise. As to artificial immunity against tuberculosis, he hoped that the time will soon come when this will be rendered possible by the discovery of the right antitoxin. He believed that this exists somewhere in tuberculin. It might be in Koch's new remedy, which is made from an extract of the live bacilli. But somewhere there is an antitoxin in the bacilli which, if given in the proper doses, will produce an immunity. He believed that Klebs and Von Ruck are coming nearer and nearer to the solution of the question every day.

DR. KLEBS said there are two methods of great importance in the search for an antitoxin; one is work in the laboratory and the other is clinical work, and these should be entirely distinct. He had been sorry to hear it said that the search for an antitoxin is a chase after a myth, for he believed that to be a very dangerous doctrine. A belief in such a doctrine will put a stop to all investigation. Animal experimentation is necessary, and by proving in this way that tuberculosis in animals is curable the clinician has something to go on. In the study of tuberculosis a long period of observation is necessary, and this can best be obtained in the laboratory. The remedy must be tried there before it can be subjected to clinical tests.

An important thing in the treatment of tuberculosis is the hygienic management of the case. Hygiene is the most important factor in the treatment of tuberculosis, but it is likely to fail of its purposes because it is impossible to get every one to carry out the details for any length of time, and continued perseverance in one direction is the one essential thing in the treatment of the disease. To enforce hygienic rules it is necessary to have the means of carrying them out. This has been best accomplished in this country by Trudeau, who stands foremost in the treatment of tuberculosis at his sanatarium in the Adirondacks. Patients are there put through the strictest hygienic training, with the result that when they leave, after about a year's residence, they go out into the world knowing how to prevent the spread of the disease. For this work institutional treatment is necessary, and the State can do more in that direction than individuals. If the Association would take this matter up and urge its importance upon public opinion much good might be accomplished.

DR. ALLEN expressed the belief that the tubercle bacilli exists in the inflammations, and that the proper mode of treatment consists in a destruction of the pabulum on which they grow and develop. It seems to be the preconceived idea in some minds that all who believe in a specific treatment for tuberculosis should avoid dietetic and hygienic treatment, but this is not so. He had employed Paquin's serum to some extent, and one patient had recovered. There is not a single bacillus in the sputum at the present time, whereas formerly they were very plentiful. The man is now doing hard work, and is improving every day. Two other patients have been very much improved, but in one there has been such a destruction of tissue that a cure is out of the question. If patients with tuberculosis are taken in hand promptly and treated with creosote and cod-liver oil and sent to a suitable climate, like that of Colorado, he believed they can be cured.

DR. J. N. UPSHUR of Richmond said that an essential factor in the development of tuberculosis is malnutrition. In the South this lesson has been taught by the experience of the negro. Before the war it was a rare thing to see tuberculosis in the negro. Scrofula was common, but the tubercles did not develop in the lungs. This was due to the fact that at that time the negroes lived largely in the open air of the country and had plenty of nourishing food. Since the war all these conditions have changed. The negroes have migrated to the cities where they live in conditions of squalor and overcrowding, and frequently with not enough to eat, subsisting largely on decayed vegetables and over ripe watermelons. These are conditions tending to malnutrition, and here tuberculosis is found to be increasing at a very rapid rate. The lesson to be drawn from these conditions is that on account of malnutrition tuberculosis of every kind is rife among these people.

DR. GEORGE M. STERNBERG of Washington said he was very much surprised to hear the talk about the doctrine of the infectiousness of tuberculosis. The infectiousness of the disease can be demonstrated by these gentlemen upon themselves at any time if they care to do it. We cannot have tuberculosis without the presence of the tubercle bacillus, but something more than this is wanted, the susceptibility of the individual. This susceptibility depends upon family characteristics, insufficiency of diet, anemia from any cause, and upon other conditions. Another point is that there is a certain amount of antitoxic substance in every individual which can be overcome, and this overcoming of the antitoxin depended upon two factors, *viz.*, the virulence of the tubercle bacilli and the size of the dose. It has been found, for example, that a small number of bacteria may not give rise to the disease in an individual, while a larger dose will produce it, so that people who live in places where there is a large amount of dried expectoration in the air are more likely to take the disease than those living in a sparsely settled and healthy locality. There are other factors also which act as exciting causes to an existing predisposition. Such a condition is dust which irritates the lungs and leads to a chronic inflammatory condition of the mucous membranes.

Dr. James Tyson of Philadelphia stated that as one who had made use of Dr. McFarland's antituberculin he wished to say a few words in regard to his experience with it. He was glad to learn that a search is being made for an antituberculin, but his experience with that produced up to this time has been absolutely negative, owing, perhaps, to the short time he has been experimenting with it. Even in that short time, however, he has experienced the greatest difficulty in persuading patients to take the remedy. What with urticaria and painful arms the patients have been nearly in a state of rebellion, and he was almost glad when the supply of antituberculin had been used up. He hoped that those who were working on these lines would discover some other method of administering the medicine than by the hypodermic syringe, and thus do away with one of the greatest drawbacks to the use of the serum.

Dr. Paul Paquin of St. Louis said that it is evident that every one engaged in the search for a tubercle antitoxin is convinced that tuberculosis is such a mixed malady that we must depend for its cure upon remedies of different kinds, and he agreed with those who believed that no one remedy can cure tuberculosis in every form. He doubted whether a specific for all forms of tuberculosis, pure or mixed, will ever be found. Certain forms of tuberculosis, however, will recover in spite of the doctor. We must acknowledge that Nature can cure tuberculosis, and we should endeavor to adopt her methods. If we reflect on the results obtained in other maladies by the use of antitoxins we will be justified in trying to imitate Nature in her cure of tuberculosis.

Dr. McFarland said that Dr. Tyson's experience with his antituberculin agreed with that of Dr. Wilson so far as the urticaria was concerned, and he thought it was due to the fact that the serum was too fresh. It had been said that tuberculosis is a disease which might get well of itself. Nobody doubted that, and laboratory workers are trying to find out *why* it gets well and *how* it gets well, so that they may copy Nature's methods. It is a fact which he could not explain, but for which he was very sorry, that laboratory workers have not the sympathy and help of the clinician. As a matter of fact the laboratory worker is the clinician's best friend.

Dr. de Schweinitz, in closing, said that tuberculin is a solution of some of the products of the germs, but is not a solution of all the germs, because some of the metabolic products are destroyed. For this reason tuberculin cannot have the same effect as if the live bodies of the germs themselves were injected into the body.

Dr. Rochester said he was glad to find that all recognize the fact that malnutrition is one of the serious conditions predisposing to tuberculosis. While not a laboratory worker himself, he wished to make a severe criticism of the attack that had been made on the laboratory worker. For any man to disparage the work of laboratory men is utterly unjustifiable. For the past ten or fifteen years all the greatest advances in medicine have been made by the laboratory worker. He felt that he should apologize for having mentioned a preparation that has been advertised in the way that aseptolin has, and he thought that the profession should not use remedies advertised in this way. He had used it only at the earnest request of his patients. The urticaria which Dr. Tyson complained of in the use of antituberculin was similar to that which he had met with in the use of Paquin's serum. Bonn's nuclein was not an antitoxin, but he had obtained results from its use which he had not been able to get with any other remedy.

Dr. Flick said that his treatment with iodoform and europhen is in line with that by antituberculin, and if it were possible to keep patients immune to the development ot new foci the disease might he cured. If it were not for auto-intoxication patients might get well.

Dr. Borland said he had not meant to cast any reflections upon the work of the bacteriologist. He valued the work of the laboratory man as highly as any, and he would be the last to disparage experiments which might lead to a method of producing immunity.

After the closure of this series of papers and discussions upon tuberculosis, a paper was read by Dr. Woods Hutchinson of Buffalo upon

SOME DEFORMITIES OF THE CHEST IN THE LIGHT OF ITS ANCESTRY AND DEVELOPMENT.

He divides all chests roughly into the quadrupedal chest, or dog-form, and the flat chest, or human form. The first is the primitive chest, produced by going upon all fours so that the only direction for expansion is anteriorly, while the flat chest was developed when primitive man became a climbing animal. The flat chest of the bat, due to the drawing up of the scapulæ by the action of the wings, was at one time supposed to place this animal in the same class with man instead of with rats. From a large number of measurements he has reached the conclusion that the familiar flat chest of consumptives is not flat at all, but, if he might make use of a Hibernianism, appears to be flat because it is so round. In other words, he believes it is a reversion toward the ancestral type, and that the chest approaches so nearly the round or quadrupedal form that the scapulæ have a tendency to slip off the shoulders when the person assumes a stooping attitude. The reason why tuberculosis attacks the lungs more frequently than any other organ of the body, according to the author of the paper, is because the lung is the organ of the least resistance, and the reason for this is that it is the youngest portion of the body from a biologic point of view.

The next paper, upon the

MANAGEMENT AND TREATMENT OF MALIGNANT TYPES OF CROUPOUS PNEUMONIA,

was read by Dr. D. S. Campbell of Detroit. He advocates the expectant plan of treatment, and called attention to the necessity of taking care of the heart in every way as this is the organ that is chiefly attacked. The fever should be combatted by cold applications. From this plan of treatment he has obtained good results, both in hospital and private practice. The mainstay in his treatment was the cold bath.

As a striking contrast to the main feature in Dr. Campbell's paper, the use of cold water, **DR. J. EICHBERG** of Cincinnati then presented a paper upon

THE HOT BATH IN THE TREATMENT OF PNEUMONIA.

The average temperature of the bath in his practice is 100° F., but it varies within a range of 95° in mild attacks to 110° F. in acute cases. The duration of the bath is ten minutes, and after being taken out the patients are wrapped in a warm, dry blanket, without previous drying, and put to bed, and after an hour are briskly rubbed. At first he had used the hot bath only for its antipyretic action, and had given it only when the temperature reached 103° F., but later he began giving the bath as a routine treatment irrespective of the height of the temperature. The bath is repeated every three hours, and he believes it is a powerful adjunct in the treatment of pneumonia. Strong evidence of the comforting effects of the bath is found in the fact that patients invariably ask for its repetition. It relieves all the distressing symptoms, especially the dyspnea. Respiration becomes slower, the temperature falls, delirium subsides, and many of the patients seem to void a larger quantity of urine. The pulse becomes slow, but only in the same proportion that the respiration becomes slower. The hot bath has the effect of "letting blood without losing it." In the treatment of his cases in this way he allowed the patient a full, nourishing diet. Drugs are not neglected, and he gives digitalis and strychnin as indications require. The hot bath may be given to patients of any age, the last patient he treated in this way being seventy-three years old. Cold cloths may be laid on the head and face during the administration of the bath, if desirable. Five or six baths a day are given during the febrile period, and one or two a day afterward. In his experience with this treatment seventy-four patients have recovered and nineteen have died. Six died suddenly on the second and third days.

CHEYNE-STOKES' RESPIRATION

was the title of the next paper, read by **DR. N. S. DAVIS, JR.**, of Chicago. His attention had been directed to this subject some time ago, and in looking into it he was struck by the meager amount of literature relating to it. Cheyne-Stokes' respiration has been observed as an accompaniment of many disorders, and can be produced artificially. It occurs most frequently in cerebral affections, but has also been seen in hemaphilia, in hemorrhage after operations, whooping cough, croupous pneumonia, and after tracheotomy. It occurs most frequently as a complication of chronic renal disorders. It seems to be the normal method of respiration among some animals during hibernation.

DR. H. B. ALLYN of Philadelphia read a paper upon

MULTIPLE NEURITIS IN INFLUENZA,

in which he stated that the great majority of cases are of toxic origin. The term "neuritis" was used for convenience. The milder type of influenza is more likely to give rise to neuritis than the severer forms. He believes that the poison of influenza is a frequent cause of attacks of neuritis and multiple neuritis. The difference between neuralgia and neuritis is one of degree rather than of kind, and he thinks that a great many cases reported as neuralgia really are neuritis.

A CASE OF ACUTE LYMPHATIC LEUKEMIA WITH STREPTOCOCCUS INFECTION

was the title of a paper read by **DR. J. B. HERRICK** of Chicago. This case, which resulted fatally, was not allowed to go to autopsy, but a quantity of blood was taken from the heart immediately after death, and experiments made with it confirmed the diagnosis, and blood obtained from the finger two days before death showed streptococci. The question arose whether it was not a streptococcus disease with leukemic complications.

The next paper read was entitled

CHRONIC INFLAMMATION AND ULCERATION OF THE DUODENUM, WITH RESULTANT REFLEXES,

by **DR. J. M. ALTEN** of Kansas City, Mo. He stated that the disease is more common in women than in men because of the greater reflexes in the former, and occurs most frequently between the ages of twenty and forty years. It is frequently the result of typhoid fever, exanthemata, burns, etc. Inflammation of the duodenum will produce inflammation of the skin. It has long been a well-known fact that gastric disturbances cause insanity, but it has never been known why they do so. Epilepsy is also caused by reflexes, and a large number are the result of reflexes due to inflammation of the duodenum. He believes, also, that ulcer of the stomach is frequently the result of extension of ulcers of the duodenum, and that the latter are very much more common than the former. The treatment consists in keeping the organs at rest, and in maintaining the nutrition of the patient, resorting to rectal alimentation when necessary.

REVIEWS.

THE MULTUM IN PARVO REFERENCE AND DOSE BOOK. By C. HENRI LEONARD, M.A., M.D., Professor of the Medical and Surgical Diseases of Women, Detroit College of Medicine. Detroit: The Illustrated Journal Co., Publishers, 1896.

THIS is a new and enlarged edition of the Dose Book, printed and bound in a handy manner for the pocket. It gives the doses of over three thousand preparations, and also contains tables of poisons and antidotes, the solubility of drugs, abbreviations, urinary tests, schedule of fees, etc. It is a convenient and useful book of its kind.

ORGAN DISEASES OF WOMEN AND STERILITY CURABLE BY MEDICINES. By J. COMPTON BURNETT, M.D. Philadelphia: Boericke & Tafel, 1897.

HE who believes that displacements of the uterus may be corrected by the internal administration of high potencies of *Thuja occidentalis*, should read this poorly printed book. Those who cannot bring themselves to such a faith, will simply marvel that such stuff can be written at the present day.

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ORIGINAL ARTICLES.

LAW OF REFRACTION-CHANGE FOLLOWING INCREASE OR DECREASE OF BODY-WEIGHT.[1]

BY GEORGE M. GOULD, M.D.,
OF PHILADELPHIA.

IN starvation, ninety-seven per cent. of the fat of the body is lost before death, and of the remaining three per cent. the orbits always retain some and a larger amount proportionately than other localities. This seems to indicate that the cushion of fat blanketing the eyeball posteriorly is of great importance to the function of vision, and if so, it would appear natural that great increase or decrease of body-weight, consisting mostly in gain or loss of fat, might lead to changes of fat-deposits in the orbit, with consequent variations in pressure upon the eyeball. If to this consideration we add the noteworthy fact that a variation so small as that of one millimeter in the anteroposterior diameter of the eyeball produces the huge ametropic change of three diopters, we recognize how slight a difference in orbital pressure is required to account for a marked variation of refractive error. It is easily demonstrable that a difference of one or two diopters may be produced simply by increase or decrease of posterior pressure, without posterior staphyloma or in any way altering the total capacity of the eyeball, but simply by altering its shape. The equatorial diameter would be lengthened by a slight polar shortening, and *vice-versa*. The ametropia of albinotic eyes shows this fact produced by another mechanism.

These purely *a priori* thoughts had been in mind for years, and I had had a number of patients in whom changes of refraction were suspected to be coincident or consequent upon changes in body-weight, but there were always some elements of doubt, due to the fact that as the patients had been previously examined by other oculists, I might reasonably suspect they were errors due to my own carelessness, etc. Last spring, however, several cases came nearly together, and a study of the case-records appeared to warrant a tentative theory, or working hypothesis, of sufficient plausibility to justify making the suggestion public. I remember to have been often perplexed before the present suggestion occurred to me to account for decreases in myopia. I, by no means, claim any great definiteness of result or any precise formulation of a law, except in general terms, and liable to modifications and exceptions. I myself have had one or two cases showing that, if founded upon fact, the rule is not invariable. It certainly could not be so, because many complicating conditions and circumstances must occur and must be taken into account. With all due allowances and justifiable cautions it seems to me that the thought is a reasonable one, and is given in order to be proved or disproved by the future observations of many. If it is true it will help to explain a number of perplexing cases, and put us and our patients on guard. I am sure the common belief that myopia does not lessen is frequently disproved by facts. It has for years been my custom to expect refraction-changes consequent upon severe general illness, and it may be that these are, at least in part, mere corollaries of the theory under consideration.

In brief my suggestion is as follows: Great increase of body-weight may cause shortening of the anteroposterior diameter of the eyeball or alterations of curvature (increase of hyperopia, decrease of myopia, or similar changes of astigmatism); and on the other hand, great decrease of body-weight may be coincident with lengthening of the eyeball (decrease of hyperopia, increase of myopia, or like changes of astigmatism).

A few cases[1] clinically illustrating this law, if it may be so called, are as follows:

Case 3125.—The patient was a man of twenty-five, and was first examined March 11, 1894, with the following finding:

R.—Cyl. 0.25 ax. 20°; L.—Sph. 5.50—Cyl. 0.50 ax. 160°. On March 22, 1897, I again tested the error, finding: R.+Cyl. 0.37 ax. 105°; L.—Sph. 4.75=Cyl. 0.25 ax. 160°.

Since the first examination he had gained about thirty pounds in weight, and the refraction-changes were in the right eye 0.62 D., and in the left 1.25 D. The case seems noteworthy because the change was twice as great in the highly myopic eye.

Case 4034.—The patient was a man of thirty-two, and was examined in 1889 by an oculist whose record I can trust, and who prescribed:

R.—Sph. 4.00—Cyl. 1.00 ax. 165°; L.—Sph. 1.25—Cyl. 1.00 ax. 90°. In 1895 I found: R.—Sph. 3.50=Cyl. 1.00 ax. 160°; L.—Cyl. 2.50 ax.

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[1] Read at the Thirty-third Annual Meeting of the American Ophthalmological Society, held at Washington, D. C., May 4, 5, and 6, 1897.

[1] All, of course, tested under mydriasis.

90°. On March 24, 1896, I found: R.—Sph. 2.75 —Cyl. 1.25 ax. 180°; L.—Cyl. 2.25 ax. 90°.

During these seven years the patient had steadily gained in weight a total of about forty pounds. In this case it was the highly myopic eye that had decreased in myopia a total of at least one diopter, the left remaining comparatively unchanged.

Case 1493.—A woman of twenty-five was refracted in 1891, and the following error was found: R.—Sph. 5.50=Cyl. 1.00 ax. 5°; L.—Sph. 5.50 —Cyl. 1.00 ax. 5°. In 1887 the error was found to be: R.—Sph. 4.75—Cyl. 1.12 ax. 5°; L.—Sph. 4.75—Cyl. 1.37 ax. 5°.

In the meantime she had gained about thirty pounds in weight, the coincident loss of myopia being about 0.50 D.

Case 4280.—Miss. B., eighteen years of age, was refracted April 18, 1896, and found to have the following error of refraction:

R.—Sph. 0.24+Cyl. 0.50 ax. 75°; L.—Sph. 0.25+Cyl. 0.62 ax. 105°. On April 24, 1897, the refraction was found to be as follows: R.+Sph. 0.50+Cyl. 0.50 ax. 75°; L.+Sph. 0.25+Cyl. 0.75 ax. 90°.

During the year she had gained very much in health and flesh, but just how much the increase in weight was it is impossible to say.

Case 4074.—A boy of thirteen was first refracted in November, 1895. At this time he was of normal height, but very fat, weighing about 150 pounds. On February 19, 1897, he returned, complaining that he could not see the blackboard and other distant objects as plainly as formerly. Upon inquiry, the mother said that these complaints had been growing more frequent and more pronounced during the past two or three months, during which hygiene and dietary measures had been enforced to reduce his flesh. The treatment had been so successful that during this time he had lost about fifty pounds in body-weight, and in girth the waist had fallen from 39½ inches to 34½ inches. At the same time his height had decidely increased, the lessening of fat having been followed by a rapid gain in body-length. (There is considerable indefiniteness as to the weight and height, but I secured from his tailor the waistband measurements.)

His refraction in 1895 was:

R. and L. the same+Sph. 0.25+Cyl. 0.75 ax. 90°. Fifteen months later it was: R.—Sph. 0.25 —Cyl. 0.75 ax. 180°; L.—Sph. 0.25—Cyl. 0.87 ax. 180°.

Thus there was a total change of refraction of fully two diopters accurately synchronous, with the loss of flesh. Up to the time of "going to press" there has been no noteworthy change in refraction, though I have re-examined the eyes several times.

I could cite other cases apparently of the same kind, but these seem sufficiently illustrative of the theory suggested to stimulate the observation of others. It is also possible that changes in muscle-balance may sometimes depend upon the amount of fat in the orbits and lids. An indirect but striking proof of the theory set forth consists in the fact of the production of high degrees of compound hyperopic astigmatism in albinos due to the continuous lid-pressure. The albino seeks to shut out light by the lids, and the pressure lessens the anteroposterior diameter of the cornea and shortens the vertical meridian to an enormous degree.

EXCISION OF THE HIP.[1]

By WISNER R. TOWNSEND, M.D.,
OF NEW YORK;
PROFESSOR OF ORTHOPEDIC SURGERY IN THE NEW YORK POLYCLINIC; ASSISTANT SURGEON TO THE HOSPITAL FOR RUPTURED AND CRIPPLED.

To determine the exact value of any particular method of treatment in chronic disease of the hip-joint is a difficult matter. Each case varies, and statistics and the conclusions drawn from a series of cases are often misleading. I will not attempt to gather together a vast number of figures, therefore, or to quote from other authorities, but simply to report the results of the operation of excision in the patients on whom it has been performed from 1886 to 1896, inclusive, in the Hospital for Ruptured and Crippled, New York. This work has been made possible for me by the kind assistance of Dr. W. J. Reynolds, late House Surgeon of the Hospital, who made an abstract of the histories as given in the record books of the institution, to which has been added the final results in all cases, when these could be traced. Personally, I have had the opportunity of witnessing all but two or three of the operations, and of making the final notes.

Following the plan of most American surgeons, the large majority of patients with hip disease at this hospital have been treated by means of the various forms of hip-splints in common use to-day. An endeavor is made to treat each case strictly on its merits, and the treatment is by no means a matter of mere routine. The patients first make application to the Out-Patient Department, and if the disease is just beginning, a plaster-of-Paris spica bandage is applied, which, in mild cases, is kept on until a splint is made ready, or, if the child needs hospital care, until it is admitted to the wards. If the symptoms are acute, the child is put to bed and a weight and pulley applied, with the object of overcoming the spasm and the deformity. When much deformity exists, hip-splints are not applied until this has been overcome. The patients applying for treatment all come from the poorer walks of life, and the home care in most cases is very inadequate. Many lack proper food, the hygienic surroundings are bad, and the necessary attention for the proper adjustment of the brace and its care are wanting and we cannot expect as good results as when the patient can be properly cared for at all times. In many instances when first seen the disease was far advanced and abscesses, sinuses, and marked general tuberculosis, with or without septicemia, were present. The general vitality was low, and in some an enlarged liver and spleen indicated that amyloid changes had occurred.

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[1] Read before the American Orthopedic Association at Washington, D. C., May 6, 1897.

From 1888 to 1896, 2295 patients with hip disease applied for treatment at the hospital, and during the same time 121 excisions were performed on 119 patients. This clearly shows what a small proportion were subjected to the operation, and explains the position that has been given to excision in the treatment of hip-joint disease in this institution. In no case was excision practised except with the view of saving life. In many instances it was a *dernier ressort;* in others, it was to stop excessive drain from prolonged suppuration, to check amyloid changes, or to clean out and drain septic abscesses. Excision was never practised in the first stage of the disease, save in one case of double hip disease, and all but six cases were complicated by an abscess or sinus. The operation was resorted to only when other methods of treatment had apparently failed, and when it was believed that if some operation were not performed death inevitably would soon result. In some patients the previous treatment had been careful, thorough, and scientific, but the progress of the disease was not checked and excision was resorted to, while in others neglect and poor treatment rendered the operation necessary. From the fact previously mentioned, that these patients in many instances did not have proper home care, no inference can be drawn as to the value of the different forms of splints used during the previous treatment, or as to the value of aspiration of abscesses or injection of iodoform and oil as tending to render an excision necessary. In fact, quite a number of the patients were transferred from the Out-Patient Department to the hospital wards because their parents systematically neglected them and much of the benefit from the brace treatment was entirely lost, and no doubt in some positive harm was done.

In considering the ages of the patients, it must be stated that the hospital treats in the in-patient department only those children who are between the ages of four and fourteen, and a very few cases over the hospital age-limit were referred to other institutions for operation. The total number of patients operated upon, including those referred to other institutions, does not exceed five per cent. of the total number of cases seen, and this represents the most severe examples.

Abscesses or sinuses, much more often septic than non-septic, were present in 113 patients out of 119, and this emphasizes the importance of proper treatment of this complication. This subject has been thoroughly discussed of late years, and the fact clearly established that a cold abscess should be opened, thoroughly curetted, and properly drained whenever it becomes septic. Had this been done in every instance, the number of excisions would have been smaller. In the large majority, the patients were suffering from sepsis before the operation was performed, and naturally this also affected the ultimate result.

From a study of these cases the conclusion is inevitable that in a great many the fatal result was due more to sepsis than to tuberculosis. In many cases, the osteomyelitis present, and the deep burrowing of the abscesses, rendered perfect drainage almost impossible either before or after the operation. The number of cases of hip disease where abscesses were present but not infected, or when infected were promptly opened and properly drained, proved also that sepsis is responsible for the result. Much more than five per cent. of all patients with hip disease develop abscesses and yet make a good recovery and never suffer from general sepsis.

In ten per cent. of the cases there was marked osteomyelitis present, and in these the difficulty of perfect drainage is always great. In several instances counter openings were made lower down in the shaft of the bone and gauze drains passed into the medullary canal, but when this complication exists, and the patient has in addition much bony destruction of the joins from tuberculosis, I believe amputation at the hip-joint will give better results than excision; certainly the results in the cases the writer has had the opportunity to observe have been anything but encouraging. The shock accompanying an amputation will undoubtedly be greater than that resulting from an excision, but the cause of the sepsis will at once be done away with, and if the shock is not too serious there will be some chance of the patient's recovery.

The duration of the hip disease at the time of the operation in about seventy per cent. of the cases was from one to three years, and as the patients were all in the third stage of the disease the figures are such as we would expect. Careful inquiry was made in every instance to determine if possible the cause of the disease, and in six per cent. it was ascribed to a fall, a very small percentage, if we are to believe some authorities. In two instances children were subjected to osteotomy for the relief of the flexion deformity after hip-joint disease, and sepsis occurred and excision was subsequently done.

The acetabulum was involved in about ten per cent. of the cases and it was usually impossible to determine before the operation whether or not this bone was diseased. In but one case was there found complete bony ankylosis of the femur to the pelvis. In one case the head of the femur was found loose as a sequestrum in the joint, and in several others portions of loose bone were present, but in the majority more or less complete destruction of the head of the femur had taken place. Two children were subjected to excision of both hips, in one case both operations being performed at one sitting, and in the other after an interval of about a year. Both subsequently died.

The total number of operations was 121, the total number of patients, as has been said, being 119, 78 were males, and 41 females. The right hip was removed in 69 operations, the left in 52. In 24 the anterior incision was made use of and in 97 the posterior. In cases of the kind here reported, no typical operation can be performed. The incision is made so as to open the abscess or follow up a sinus, but our preference is for the posterior incision. The operations were performed under ether anesthesia except in three cases, when nitrous oxid gas was used. The plan was always to operate rapidly, remove the diseased tissues as thoroughly as possible, and to stop all hemorrhage promptly either by ligature or pressure. The wound was thoroughly packed with iodoform gauze, and in the earlier cases a plaster-of-Paris spica bandage was applied to keep the limb in proper position. The latter procedure has not been carried out for the last four years as it was feared that the wet plaster enveloping the child might have been responsible for some of the deaths from shock, and it also delayed getting the patient back to bed as it was necessary for the plaster to set before removing the child from the operating-table. A long side splint is now used instead of the plaster, and a weight and pulley is applied to the limb to make proper traction. These can be applied after the child has been returned to bed.

The subsequent care of the wound consists in dressing it every second or third day in order to secure proper drainage, to prevent absorption of pus, if it is septic, and to promote healing by granulation from the bottom. The attempts to sew up the wound in these cases have proved failures and no matter how carefully the operation is performed it is almost impossible to obtain primary union when marked sepsis is present. The incision wounds are sometimes very slow in closing and sinuses may persist even for years. The average time for the closing of the wound in the cases that have done well has not been less than six months. Various solutions have been used to encourage healing, but washing with peroxid of hydrogen and the application of balsam of Peru and olive oil have given the best results. Occasionally sinuses have been curetted and stimulating applications have been made to them.

Of the 121 excisions it has been possible to trace but 101. Of the 99 patients traced, 52 are known to be dead; and these include the 2 cases in which both hips were removed. Of these 52 deaths, 51 were attributable to the diseased condition present, and one to accidental drowning. In the latter case the hip had recovered and was in good condition at the time of death. The cause of death in 28 was exhaustion; in 9, shock, and in 9 tuberculous meningitis. The other causes were uremia, edema of the lungs, tuberculous peritonitis 1 each, and heart failure, 2. Exhaustion was responsible for over fifty per cent. of the fatalities, and this includes all cases of amyloid degeneration, besides those cases in which general tuberculosis developed. Long-continued suppuration and the weakening effects of sepsis helped to make this the most frequent cause. Of the cases of meningitis, in only one instance could the operation be held responsible for its development. In this patient the symptoms appeared twelve days after the excision, while in the others the period was much later, and the operation probably neither delayed nor hastened the fatal termination. These figures show that meningitis was the cause of death in ten per cent. of the cases traced.

Of the fatal results, 37 occurred within six months after the operation, and 10 more within one year. In 9 cases of shock death occurred within 48 hours. That more patients did not die from shock is due, I believe, to the rapidity of operating, to the small amount of anesthetic used, and to the subsequent faithful and efficient care of the house staff and nurses. The mortality rate in this series of cases is thus seen to be about fifty-two per cent., and when the condition of many of those operated upon is considered it is evident that no other result could be expected.

Of the patients traced, 47 are living; and of this number 26 are cured of the disease with varying amounts of shortening and with varying degrees of deformity. The latter in most cases is slight. The shortening depends upon the amount of bone originally removed, and upon the time that has elapsed since the operation. The fact that the upper epiphysis of the femur is removed, and that its presence is responsible for part of the growth of the limb easily accounts for the fact that in 3 cases seen six years after operation, the average shortening was 3.16 inches. In 4 patients seen five years after operation it was 2.68 inches, while in those observed during two years or less it was 1 inch. The shortening is not of great consequence, providing the limb is straight and in good position. When much flexion deformity is present, we usually also find more or less adduction, and this is a serious matter. In 10 patients the limb was extended to 180°; in 6, to 170° or over; in 7, to 165°, and in 6, to 160°. These 29 may be said to have the limb in a position that makes locomotion easy and are cured without flexion deformity. All beyond this have flexion and some lordosis as a result. The amount of motion in the joint varies; in 1 it is 130°, in 3 the limb can be brought to a right angle (90° of motion), 6 have from 30 to 40°, 8 have from 5 to 30°, and in 26 there is no motion. It was not possible to measure the degree of motion or the angle of greatest extension in every case, hence these data are missing in a few cases.

Of the 47 patients known to be living, we have found 26 cured. Of the remaining 21, fully one-half are in bad condition and will die from exhaustion if not from other causes, as the result of long-continued suppuration. Of this number, in 2 the sinuses are still discharging six years after the operation, in 1 after five years, in 2 after four years, in 1 after three years, and in 2 after two years. In the remaining cases, too little time has elapsed since the excision was done to allow of a final report being made. The results may be stated as 26 cures after 101 operations, and we have reason to believe that of the patients not traced many are living. To save only one patient out of every four operated upon, while not brilliant, shows that some good has been done, for these were all desperate cases, and we believe the patients would have died had the operation not been performed.

Whether amputation will save more lives in the same number of cases remains to be seen. Excision, to prove of benefit in a large percentage of cases, must be done early, and then the question is, Are we justified in operating early, knowing the good results to be obtained from mechanical treatment? The majority will answer in the negative, or in favor of the treatment by means of the various hip-splints now in use; and as our knowledge in their application increases and the general practitioner learns to interpret the early symptoms more promptly, so will the necessity for excision diminish.

Results in 121 excisions of the hip, performed on 119 patients at the Hospital for Ruptured and Crippled, New York, 1888 to 1896 inclusive: Of this number, Dr. V. P. Gibney performed 100, Dr. W. R. Townsend performed 15, Dr. W. J. Reynolds performed 3, Dr. Royal Whitman performed 1, Dr. W. B. Thompson performed 1, Dr. W. R. Martin performed 1.

A summary of the cases here reported is as follows: Total number of patients operated upon, 119; total number of excisions of the hip-joint, 121—males, 78; females, 41. Right hip, 69; Left hip, 52. Due to a fall, 20. Cause unknown, 101. Anterior incision, 24; posterior incision, 97.

Ages at time of operation: Three years, 1; four years, 12; five years, 13; six years, 17; seven years, 15; eight years, 16; nine years, 14; ten years, 13; eleven years, 8; twelve years, 6; thirteen years, 2; fourteen years, 3; fifteen years, 1.

Acetabulum involved in 18; of this number, 10 are living, 6 are dead, and 2 cannot be traced. Marked osteomyelitis present in 10. Duration of disease before operation: In 1 case, two weeks; in 1 case, three months; in 2 cases, six months; in 3 cases, eight months; in 41 cases, one year; in 37 cases, two years; in 13 cases, three years; in 6 cases, four years; in 5 cases, five years; in 2 cases, six years; in 3 cases, seven years, and in 7 cases the time is unknown.

Abscesses or sinuses were present in 113 cases, no abscess in 8, and double hip disease in 3. Both hips were excised in 2 cases; hip and spinal disease in 5, hip and knee disease in 2, hip and tarsal disease in 2. The hip, pubes, and ilium were involved in 1 case, the hips and pubes in 1, and the hip, sacrum, and coccyx in 1. Disease developed after Gant's operation of osteotomy in 2 cases, the head of the femur was loose in the acetabulum in 1, and syphilis was present in 1.

Cases operated upon in 1888, 3; in 1889, 1; in 1890, 6; in 1891, 22 (cured, 3); in 1892, 16 (cured, 4); in 1893, 13 (cured, 3); in 1894, 15 (cured, 0); in 1895, 17 (cured, 7); in 1896, 28 (cured, 9). Cases noted six years after operation have the following shortening: Four inches in 1 case, 3 inches in 1, and 2½ in 1; average, 3$\frac{1}{16}$ inches.

Five years after operation: four inches in 1 case, 3 in 1, 2½ in 1, and 1¼ in 1. Average, 2.68 inches.

Four years after operation: 2¾ inches in 1 case, 2½ in 1, 1½ in 2, and 1¼ in 1. Average, 1.6 inches.

Three years after operation: 1½ inches in 1 case, 1 in 1, ¾ in 2. Average, 1.08 inches.

Sinuses exist after operation for six years in 2 cases, 5 in 1, 4 in 2, 3 in 1, 2 in 2, and 1 in 12. Deaths, 52. From exhaustion, 28; shock, 9.

Tuberculous meningitis, 9. Developed twelve days after operation in 1 case; 1½ months in 1, 2 in 2, 2½ in 1, 3 in 1, 5 in 2, and 14 in 2. From acute uremia, 1; odema of lungs, 1; tuberculous peritonitis developed four months after operation, 1; heart failure, 2; drowning, nearly two years after operation, 1, Death occurred within six months of operation in 37 cases, 1 year in 10, 2 years in 3, and 5 years in 2.

CLINICAL MEMORANDA.

TWO CASES OF SYPHILITIC DISEASE OF THE LIVER.[1]

BY GEORGE L. COLE, M.D.,
OF LOS ANGELES, CAL.

I BELIEVE that some cases of syphilitic disease of the liver are mistaken for ordinary cirrhosis or for certain other obscure diseases of this organ and that some lives might be saved by appropriate treatment, which otherwise would succumb to the disease. My conclusion in this respect is based upon one or possibly two cases treated for cirrhosis of the liver (or for Bright's disease) by several competent practitioners, the patients having fallen into my hands when death seemed inevitable, and having been rescued by large doses of potassium iodid, and by mercurial injections and inunctions continued over a long period of time. In the case of one of these patients I accidentally discovered a syphilitic history which had been withheld from the former physicians in attendance, and this fact, together with the true picture of cirrhosis which the case presented, rendered completely pardonable the mistaken diagnosis which had been made.

The majority of text-books on practice either omit this subject entirely or dismiss it so briefly that our attention is not sufficiently drawn to it. Loomis, in his "Practical Medicine," devotes two pages to the subject, but under the head of "Gummy Tumor of the Liver," Osler devotes a page and a half to it, and among other things says that "the patient is anemic and passes large quantities of pale urine containing albumin and tube casts." Flint gives the subject a portion of one page, in which he says "it is usually accompanied by some or all of the ordinary symptoms of cirrhosis, and while not common it is one of the most frequent forms of visceral syphilis." Wood dismisses it with one short paragraph, while Strumpell devotes a page and a half to it, and begins his paragraph on treatment with this clause: "Whether we feel certain of syphilitic hepatitis, or merely suspect it, specific treatment should be tried." The cases which I wish to report are the following:

CASE I.—Male, aged forty-five, single; good family history. During the past ten years has been a heavy drinker, taking whisky straight and regularly rather than periodically. He denies all history of venereal trouble other than gonorrhea, but has lead a dissipated sexual life for many years. On September 6, 1893, I found him confined to bed. There was considerable edema of the lower extremities, and the abdomen was distended by fluid. The heart was normal, and analysis of the urine showed neither albumin nor casts. Paracentesis abdominalis had been performed three times previous to this date. On the 17th of September I drew off the fluid from the abdomen, when a careful examination showed the presence of a slightly enlarged liver, but further than this I was not able to determine anything characteristic of cirrhosis.

Thinking I had a typical case of hepatic cirrhosis to deal with, I treated him in accordance with this theory and interdicted the use of alcohol. Finding that he could tolerate large quantities of potassium iodid I prescribed it in dram doses three times daily with small doses of mercurials. During the three months following my first visit I drew off the abdominal fluid six times, removing two gallons each time. During the latter part of this period he wore an elastic abdominal supporter and the fluid accumulated more slowly. He began to gain strength and flesh and to resume his usual avocation, not forgetting in spite of my protests to return to his old convivial habits. He continued to take the iodid regularly and did well, although drinking heavily. The fluid formation ceased entirely and he went on to perfect health for many months.

On November 1, 1894, I was summoned at midnight, not having seen him professionally for nearly a year, and found him suffering from a very severe gastric hemorrhage. He was prostrated several days from this, but in ten days was up again, drinking as before. He has gone on to the present time without any further trouble. The fact of his speedy and complete relief, with no tendency toward a return of his former condition, notwithstanding the continued use of alcohol, and the want of evidence to show an established collateral circulation, has led me to believe this a case of specific disease of the liver. Other than the course of the disease, together with the tolerance of large doses of the iodids and of mercury, there is no *positive* evidence of syphilis.

CASE II.—Male, aged forty-four, father of two healthy children, aged four and seven years. When I first saw him, April 7, 1891, he had been confined to his room for three months, most of this time being unable to leave his bed. His sickness, however, had extended over a period of two years, and was ushered in by colicky pains in the hepatic region and gradual loss of flesh. I found him greatly emaciated, the feet and whole lower extremities edematous, and the abdomen distended by fluid.

There was considerable dyspnea from fluid in the pleural cavities. Examination of the heart and lungs did not reveal anything abnormal. I could not procure urine for examination but elicited the fact that some weeks previously he had been catheterized several times without result, and later on had passed large quantities of urine of such a character that a diagnosis of Bright's disease had been made and treatment had been carried out in this direction for several weeks.

Examination of the hepatic region was unsatisfactory on account of the ascites and hydrothorax. He denied any venereal history. He had been tapped twice within the month previous to my first visit. A specimen of urine was obtained on the following day, but on examination did not reveal the presence of albumin, sugar, or casts. On the 9th, two days after first seeing him, I drew off ten quarts of ascitic fluid, when examination of the hepatic region showed what seem to be a typical hobnailed liver, except that the surface projecting below the ribs seemed more markedly uneven than in any case I had previously seen. He had been taking a pill which he said contained mercury and this I had him continue, with the addition of potassium iodid in small and increasing doses. A few days later he informed me that about fifteen years before he had had a sore on his penis, which had healed so rapidly, without any further symptoms, that he did not suppose it could possibly be syphilis or could have any connection in any way with his present illness. Soon after I met the physician who had treated him years previously, and he informed me that the patient had had a true chancre at that time.

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[1] Read before the California State Medical Society, April 1, 1897.

During the following five months the abdomen was tapped at intervals of from ten days to two weeks, and during this time mercurial inunctions and hypodermic injections of albuminate of mercury were given alternately, and the iodid was increased to about two hundred grains daily. He soon began to gain in strength and flesh, the time between tappings was increased, and an elastic abdominal supporter was applied. After the thirty-fifth tapping, which occurred on June 30, 1892, about fifteen months after the first removal of fluid from the abdomen, he gradually resumed work and is well to-day. He has continued to take the iodids intermittently and is apparently in as good health as ever.

ADDUCTOR VOCAL PARALYSIS.

By LEWIS S. SOMERS, M.D.,
OF PHILADELPHIA.

PARALYSIS of the intrinsic muscles of the larynx may result from a central lesion situated at the roots of the spinal accessory nerves in the floor of the fourth ventricle; from peripheral lesions, or may be due to changes in the structure of the muscles themselves. The laryngeal muscles may be affected in groups, or more rarely, individually. Probably the most frequent cause of adductor vocal paralysis, especially in females, is hysteria. The following case is reported on account of the absence of hysteria in the patient and for the reason that the etiology was somewhat obscure, the paralysis occurring after pneumonia. The history is as follows:

F. W., female, aged twenty-five years, single, occupation singer and music reader. Was first seen November 3d, 1896. Family history negative. She had had measles when a child; at five years she was said to have had "walking typhoid," and was sick for six months. Subject to headache on excitement for a number of years and also has sick headache when riding in the cars. She is a well-developed, robust, educated woman, and has been strong and healthy since childhood until the early part of December, 1895, at which time when walking with a friend he fell dead. This shock caused a general nervous condition (neurasthenia) of three-weeks' duration, at the end of which period she developed pneumonia, involving the left lung, being very ill for six weeks.

During convalescence from the pulmonary trouble she noticed that her speaking voice was not as strong as before, and was easily fatigued and became husky. On attempting to sing soprano she found it impossible, as she could not produce the notes, and she then placed herself under a physician's care for the vocal paralysis, but without results. At this time her general condition was good, although she was slightly nervous and suffered from a moderate degree of bronchial irritation, this subacute bronchitis being especially annoying at night. At irregular intervals attacks would occur resembling those of croup, and on several occasions it became necessary to call in medical assistance.

When I first saw the patient she was nervous and worried, as her singing was necessary in gaining her livelihood. She complained, in addition to the loss of her singing voice, of a tickling and dryness of the throat, of "catching cold" easily, and of hoarseness, and had a dry, irregular cough. Digestion was not normal, as she sometimes, though rarely, vomited after a full meal. She was moderately constipated, and felt bloated after eating, the tongue being coated, although her appetite was good. Headache was often present, and was most marked in the occipital and temporal regions. She slept well. The heart and lungs, with the exception of the slight bronchitis, were normal; the reflexes were normal, as was menstruation.

On examination of the upper respiratory tract the Schneiderian mucous membrane, especially over the middle and inferior turbinals, was found to be congested, and a moderate degree of turbinal hypertrophy was present. The pharynx was slightly sclerotic, and the lingual tonsil on the left side hypertrophied, while the faucial tonsils and postnasal space were normal. The larynx was plainly visible with the aid of the laryngoscope, the upper two rings of the trachea being easily distinguishable. The epiglottis and mucous membrane of the larynx were normal. The laryngeal and faucial reflexes did not differ from the normal, as the sensibility was not altered. The vocal cords were widely separated, being at an equal distance from the median line on both sides, the arytenoid attachment of the cords being the most characteristic feature, as they were widely apart. Motion of the cords was *nil* on respiration, and only by severe effort could movement be effected on phonation. The cords were normal in color, concave in appearance, and somewhat flabby.

The treatment consisted of deep inhalations of compound tincture of benzoin in albolene, and the interrupted electric current twice a week. The faradic current was applied by placing one electrode over the thyroid cartilage, and the other at some indifferent point. The duration of local treatment was from five to ten minutes at each *séance*. In addition to the local applications, the patient received one-sixtieth of a grain of sulphate of strychnin three times a day, the dose gradually being increased until she received one-tenth of a grain per day. Phosphate of soda as a laxative was directed to be used as indicated. Improvement of the vocal condition was gradual, the lateral arytenoids responding first, until the 8th of December, when she was decidedly better, the only changes from normal being the remaining paralysis of the arytenoid muscle. At this date the singing voice was nearly normal, slight fatigue after much use of the voice and some inability to reach high notes still being present. On January 5, 1897, the patient had not received local treatment or strychnin for more than two weeks, yet had been able to sing four solos during one day with but little laryngeal fatigue, and said that she never felt better physically. Except for some slight outward rotation and separation of the arytenoid cartilages the larynx was normal.

The total absence of any hysteric element in the case, as corroborated by Dr. Henry P. Boyer, opened up some interesting questions regarding the etiology of the paralysis, and also the location of the diseased tissue or tissues. It is a question whether the lesion was central or peripheral (in the spinal accessory or recurrent laryngeal nerves), or located in the affected muscles themselves. The absence of general or laryngeal evidences of any of the stigmata of hysteria at once eliminated that factor from the etiology, as in hysteria the cords while apparently paralyzed on phonation are freely movable during respiration. Cough is usually present in the hysteric form, but generally absent in true paralysis, although it may be present. As a general rule, it may be said that if adductor vocal paralysis comes on suddenly in a healthy woman and is intermittent, it probably is hysteric in origin. These cases frequently coexist with some disorder of the genital apparatus.

The elimination of disease of the nerve-centers or of the vagus, with the spinal accessory, becomes of importance, as treatment will be influenced greatly by the cause of the laryngeal paralysis. When there is localized disease of the brain or of the nerves already mentioned, other portions of the body besides the larynx are implicated, and the history of the case will generally point to some lesion either of the nerve-tissues directly, or, as is usually the case, pressure symptoms will be present. As the superior laryngeal is generally considered to be the sensory nerve of the larynx, and the inferior or recurrent nerve the one of motion, we could readily eliminate disease of the former as a cause by absence of interference with sensation, the laryngeal sensibility in this patient, as before said, being normal. The recurrent laryngeal nerves may be affected as the result of pressure, as from an enlarged thyroid gland, or by changes in their structure. Usually but one nerve is affected as the result of organic changes, more rarely both are involved. Cases have been observed in which the separate peripheral filaments of the laryngeal nerves have undergone morbid alterations producing paralysis of the different intrinsic muscles of the larynx.

The diagnosis in this case lay between peripheral changes in the inferior laryngeal nerves and alterations in the structure of the muscles involved. Morbid changes of the muscles without involvement of the nerve-fibers has been observed in rheumatism, progressive muscular atrophy and typhoid fever, in some cases the musculature being affected without apparent cause, and giving rise to a so-called idiopathic form. It seems impossible without a microscopic study of the nerves or muscles involved to make an accurate diagnosis, but from the history of the case and a careful study of the larynx, it seems possible that there was some pathologic change in the muscles.

The remaining question, as regards the causal relation of the pneumonia to the vocal paralysis, is rendered difficult of solution, as the former element of shock (caused by the sudden death of a friend as related in the history of the case) must be taken into consideration. This shock was followed by a period of nervous prostration of three-weeks' duration, this in turn preceding the attack of pneumonia, which latter lasted for six weeks. During this time her vocal apparatus was in perfect order, as shown by a normal speaking and singing voice, which did not become affected until late during convalesence from the pneumonia. For this reason, and further as the adductor muscles have in cases reported been affected during convalescence from severe diseases and during catarrhal inflammations, the evidence seems in favor of the paralysis being the direct result of the pulmonary changes, possibly being remotely influenced by the powerful nervous shock which she had received.

This form of laryngeal paralysis occurs most frequently in women, and especially in singers or those making prolonged use of the voice. The subject, in addition to vocal fatigue or partial loss of voice, usually complains of a foreign-body sensation referred to the larynx, and the well-known symptom complex of acute or subacute laryngitis is present. The respiration is normal, but phonation is difficult or impossible. In addition to the local affection, symptoms of anemiă or chlorosis are often present. The prognosis is favorable; although the paralysis may have existed for a number of years, cure may be effected, but the condition yields slowly and relapses are very apt to occur.

The treatment must be directed to the larynx, although it is important that the general health be maintained. Stimulating inhalations and the application of the galvanic or faradic current to the larynx, usually intralaryngeal (but in some cases the electricity may be used externally over the region of the larynx), will give the best results. Strychnin is of much value, and unless there are well-marked indications preventing, should be used in increasing doses in all cases.

The Delayed Effects of Frost-Bite.—General A. W. Greely, Chief of the Signal Corps of the United States Army, the Arctic explorer, has recently undergone an operation for the removal of the second finger of his right hand. Both hands of the explorer were frost-bitten in the Arctic regions, and although healing had apparently occurred, caries of the bone recently set in, necessitating the operation. It is said that the condition has been aggravated by the constant handshaking to which he has been subjected.

An Epidemic of Scarlet Fever Due to Milk Supply.—An outbreak of scarlet fever at Plainfield, N. J., has been traced by the Board of Health to the milk suppy furnished by a wholesale dealer. One of the employees, who was ill with scarlet fever, continued to assist in handling the milk. Under the supervision of a health inspector five hundred quarts of milk were seized and dumped into the sewer. The infected employee has been quarantined.

NEW INSTRUMENT.

THE MICROMOTOSCOPE.

By ROBERT L. WATKINS, M.D.,
OF NEW YORK.

FOR more than a year I have been trying in various ways to present living microscopic objects on a screen. After overcoming various obstacles, it was found possible to do this directly by the use of a special arc light in connection with the microscope. The one great obstacle—heat—was still present. This dried the specimens so promptly that the living objects were killed and the method had to be abandoned. The appearance of the vitascope, however, suggested the possibility of applying some such method to the studies I was pursuing. This proved a perfect success. By means of this instrument I discovered that the active motion of living microscopic objects could be readily photographed. By using from 50 to 150 feet of the vitascopic film, and taking a series of impressions in sufficiently rapid succession, I have been able to secure pictures which when passed through a lantern at the same rate of speed will present on a screen all the motions of the objects photographed, where they can be witnessed by an audience of any size. This fact was recently demonstrated to a party of physicians who were especially invited to witness the exhibition.

The value of this discovery cannot be overestimated, not only for the use of the scientist in studying the vital processes of microscopic life, but also as a method of teaching these facts to students and the public.

In my investigations, this method has been applied more especially to the study of blood-corpuscles. The active motion of the leucocyte can thus be readily reproduced. It can be seen to stretch out its finger-like prolongations and then retract them. The nucleus can likewise be seen to vary its shape, to split up into two or more, and sometimes the cell itself to divide into many parts.

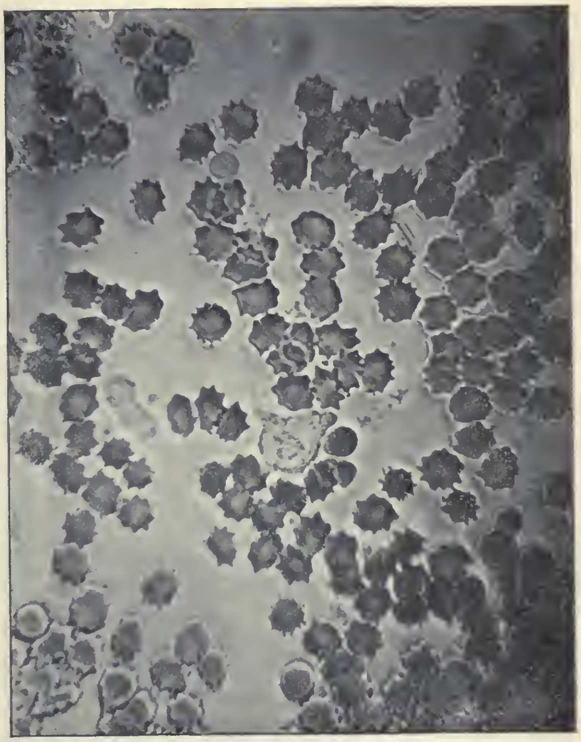
The accurate reproduction of these various vital processes of cell life will be of great assistance in revealing the exact condition of the blood, and help us to get one step nearer the ultimate processes of life. From what I have seen I do not hesitate to say that various cells now known by different names will be found to be only transition forms of the leucocyte. The ameboid motion of the leucocyte continues some times for fully twenty-four hours after the blood is placed on the slide of the microscope.

Another field of usefulness in which the micromotoscope will prove of service is in the study of the life of microbes in stale urine and other fermenting fluids. Indeed, it will be applicable to the study of the motile efforts of all microscopic germs and bacilli.

To secure an appearance of continuous motion these pictures must be taken in rapid succession, allowing an exposure of from $\frac{1}{50}$ to $\frac{1}{25}$ of a second; and to complete a full cycle of motion, as in the expansion and contraction of a leucocyte, requires from 800 to 1500 successive pictures.

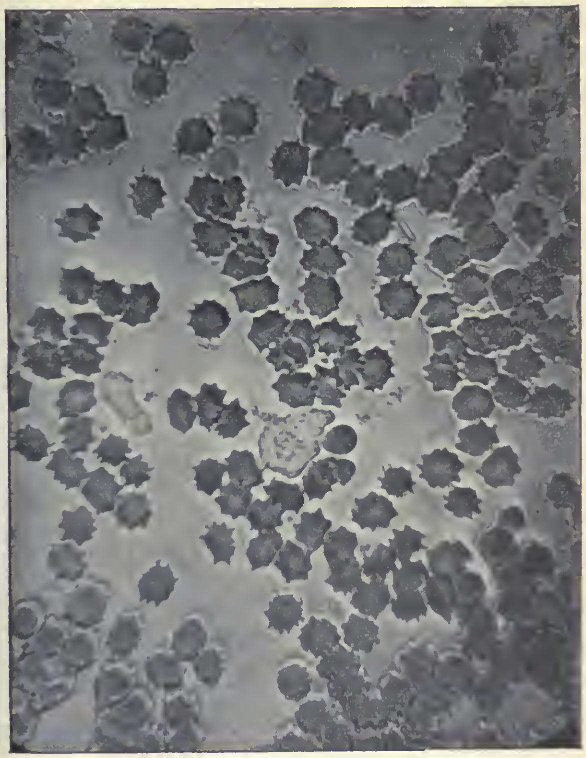
The accompanying photographs present, in a general way, an idea of the successive impressions as they appear in the vitascope.

FIG. 1.



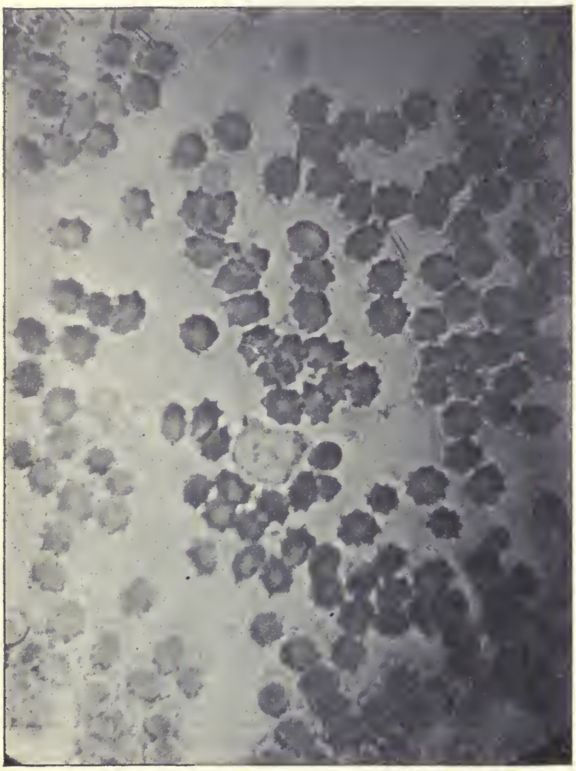
Freshly drawn blood, showing two leucocytes in center. Red cells mostly crenated. 1-12 obj., 2 ocul. Exposure, two seconds.

FIG. 2.



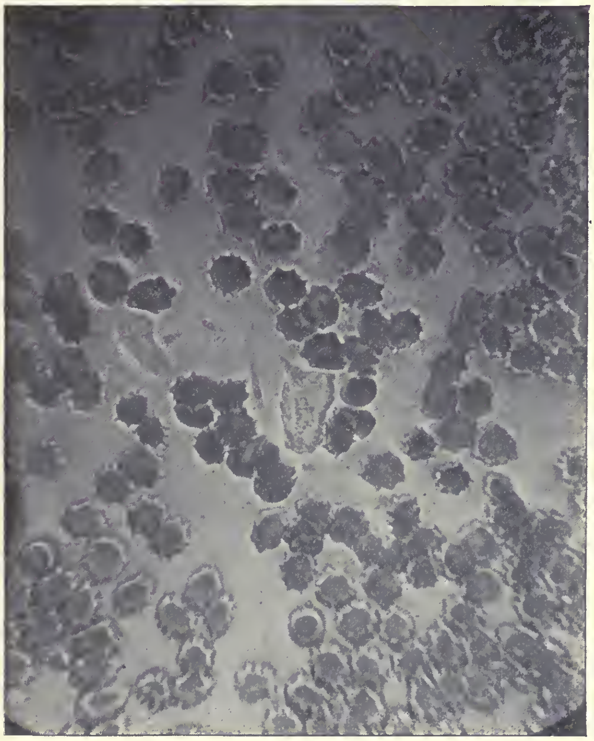
Taken two minutes after Fig. 1. Slight change in shape of large leucocyte. Nucleus also changed slightly in shape.

FIG. 3.



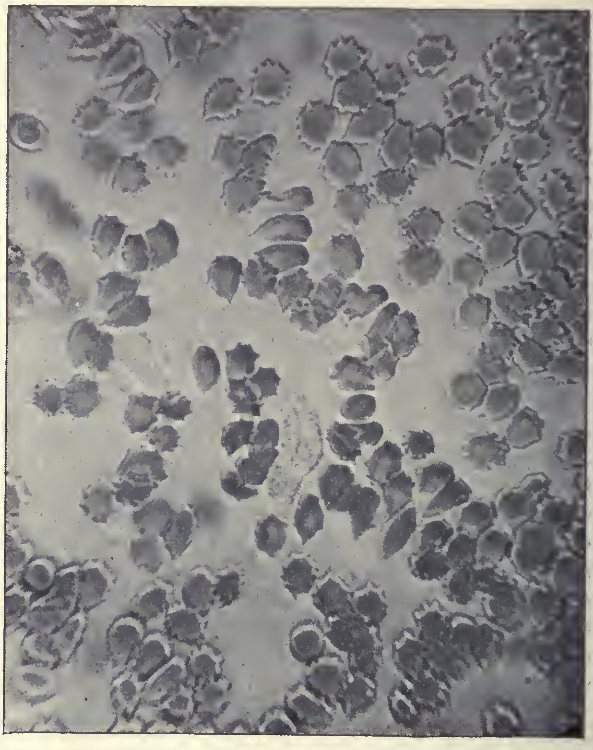
Fifteen minutes after Fig. 2. Leucocyte in center much changed.

FIG. 4.



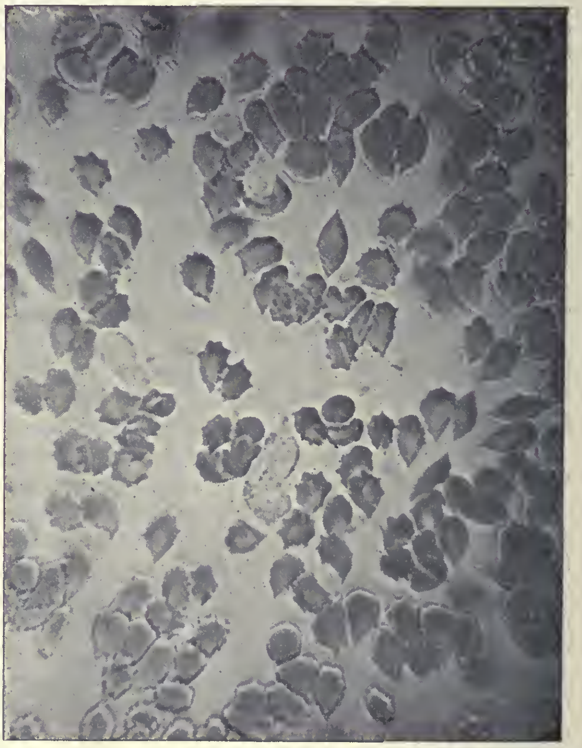
Finger-like prolongation very marked. Nucleus nearly gone. Contour still changing.

FIG. 5.



Elongation of same cell. Nucleus returning. Red cells in motion.

FIG. 6.



Finger prolongation distinct at top of large leucocyte, reaching out for a micrococcus. A division line seen below center of cell. Granules indistinct in various parts of the cell; probably micrococci being digested.

The time between the first and the second photographs is two minutes; the others are fifteen minutes apart, allowing an exposure of from one to two seconds.

The impression made by their rapid passage before the eye when placed in a vitascope gives, as is well understood, the sensation of continuous motion.

THERAPEUTIC NOTES.

For Sick Headache Due to Nervous Causes.—

℞	Atropin sulphate	gr. ss
	Chinoidin	ʒ i.

M. Ft. Pil. No. 9.
Sig. One pill two or three times daily.—*Bartholow.*

For Coexisting Pelvic Congestion, Anemia, and Constipation.—

℞	Magnesia sulphate		℥ i
	Iron sulphate Manganese sulphate	aa	℈ j
	Acid sulphuric dil.		ʒ ii
	Water		℥ iv.

M. Sig. A tablespoonful in a wineglassful of water before breakfast.

Treatment of Ozena.—MOURET (*La Med. Moderne*, May 8, 1897) found in the crusts from a nose affected with ozena: (1) Large streptococci in long chains and very abundant. (2) Diplococci with and without capsules. (3) Bacilli resembling those of Löffler.

Nasal irrigations, vibratory massage, cauterizations with chlorid of zinc, serotherapy, and electrolysis have all been successful in the hands of different men in the treatment of this disease, but the results have been only temporary. The author believes that the real cause of the disease is not yet known, but that the chief lesion is a trophic disturbance of the mucous membrane, vitiating profoundly the secretion of the glands. The temporary improvement noted after the various sorts of treatment is due to the expulsion of the crusts and the stimulation of the glands. This is best accomplished, however, by the use of vichy water or of bicarbonate of soda both internally and as a lotion, for the alkalies in general favor glandular action.

Massage in Recent Dislocations of the Shoulder.—MASSY (*La Semaine Med.*, May 19, 1897), in order to overcome the arthritis and periarthritis which result from the injury and attempts at reduction of a dislocated shoulder, makes use of massage in the following manner:

Two hours after the arm is in place and bandaged, or put in a sling, the shoulder is stroked lightly on all sides with the palm of the hand. This massage does not exceed five minutes in duration. In three or four hours it is repeated. The following day a somewhat stronger massage is given, consisting of stroking and kneading, and this is repeated after eight hours. On the second day a thorough massage is administered to the whole arm and shoulder-joint, consisting of the four motions of stroking, rubbing, kneading, and beating. This is repeated each day for fifteen minutes at a time, the arm being removed from its sling for the purpose and held by an assistant to prevent its dislocation. All bandages are removed at the end of a week, and the arm is carried in a sling for another week. By these means Massy obtains in uncomplicated dislocations complete cure in three or four weeks.

Rectal Treatment of Bronchiectasis in Children.—A treatment of bronchiectasis in children recommended by MOLLE is described in *La Semaine Medicale*, May 19th, as follows:

℞	Eucalyptol	2 parts
	Tr. of benzoin	10 "
	Balsam of copaiba	16 "
	Creosote	5 "
	Sweet almond oil	7 "

M.

This mixture is a clear and homogeneous liquid, of which thirty drops may be given in milk as an enema. The mode of administration is important. The child is placed on its side with its knees slightly drawn up, and a soft rubber catheter is passed four inches into the bowel. A small syringe is drawn nearly full of milk and then held in a vertical position while the half dram of medicine is poured into it. The air is expelled, and while the syringe is still held vertically the fluid is forced into the rectum. In this manner not a drop of the medicine is lost. The child experiences a temporary burning sensation to which it rapidly grows accustomed. If this treatment is persisted in for months, the expectoration, cough, and dyspnea all improve, the signs of dilatation, especially around the base, diminish, and the general condition is correspondingly better, even proceeding to a veritable cure.

Recovery After Cyanid of Potassium Poisoning.—WIGLESWORTH records in the *British Medical Journal* of April 24, 1897, a case of poisoning by cyanid of potassium, followed by recovery. A man aged twenty-five, in marked alcoholic intoxication, was seen to drink something from a bottle, throw the bottle away, and then fall. Almost immediately he passed into convulsions, and fifteen minutes later, when seen by the physician, he was unconscious, his face grayish-blue, and the jaws so tightly clamped that one of his teeth was broken in forcing open his mouth for the stomach tube. The eyes were fixed and the pupils dilated, but conjunctival reflex was not entirely absent. Breathing was pectoral and the inspirations jerky, resembling faint hiccoughs. The pulse was small and rapid. Through a tube the stomach was washed out with clean water and a mixture of sulphate of iron, carbonate of potash, and pure ether was passed into it. In about five minutes the patient vomited material which was stained a blue color. A stream of cold water was poured over the back of the neck and spine, and over the cardiac region. The pulse and breathing rapidly improved, but consciousness was not completely regained for four hours. From the fluid in the bottle it was estimated that if the patient drank two teaspoonfuls of it, he took not less than twenty grains of cyanid of potassium. He denied all recollection of having tried to poison himself.

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OF MEDICAL SCIENCE.

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SATURDAY, JUNE 26, 1897.

THE LIVER OF THE DOG THAT BIT YOU.

IT WAS recently shown by Koch that the bile of animals dying from the cattle plague possesses strong antitoxins; these he proceeded forthwith to use in the treatment of this disease. A writer in the *Münchener Med. Wochenschrift*, May 18, 1897, calls attention to the interesting fact that this method of treatment was recommended in the Talmud some thousands of years ago. Antitoxin treatment is there advocated also, not for the cattle plague, but for the bite of a mad dog, though of course the rabbi who spoke so highly of it knew nothing of its contained antitoxins. The quoted passage is to be found in connection with the laws for the feast of the passover, where, after a general statement that meat is allowed if necessary to save life, an instance is cited to the effect that when bitten by a mad dog a man should eat a portion of the animal's liver.

That there may be no mistake as to the necessity for this most unusual proceeding (for the dog was an unclean animal to a Jew), a very good description of hydrophobia is given. The animal is mad if with open mouth and streaming saliva and drooping ears and tail between his legs he runs from side to side of the street, barking hoarsely. It seems that the fight between the friends and the opponents of the antitoxin treatment waged even in the Talmud days, for other rabbis than the one quoted were not convinced of the virtue of this treatment; while the advocate of it asserts that the liver treatment must be instituted as quickly after the bite as possible in order to be of service.

It would seem that there must have been some good evidence of the value of such a remedy to cause a rabbi to recommend it in spite of the strong prejudices against "defilement." Whether it will be adopted as a practical remedy in our own time remains to be seen. Certain it is that it would be far more convenient to eat a piece of the liver "of the dog that bit you" than to travel to Paris to be injected at the Pasteur Institute; for the dog is of necessity near at hand, and Paris is, alas! far away. There would be, too, a sweetness of revenge in killing the dog and making him at the same time cure the trouble he caused.

PROSTITUTION AS A FACTOR IN PROGRESS.

I CAN conceive of no movement, capable of resulting in greater advantage to the community, in general, than the recent opening of THE MEDICAL NEWS for the frank, fearless, and intelligent discussion of the "Social Evil." I use these adjectives advisedly for the reason that although the question is as old as society itself, and the institution (if antiquity is to count for half as much here as it does in pedigrees and ritual) is entitled to the highest rank and consideration, the manner in which it is discussed is too often either insincere, cowardly, or irrational.

The subject is usually attacked either from the point of view of the self-constituted reformer (whose zeal and positiveness are exceedingly apt to be in direct proportion to his ignorance), or from the extreme legal or religious standpoint. The limitations of the legal mind, due to its idolatry of precedent in dealing with this question are too well known to need comment. As to the theologian, his attitude is most characteristic, generally at one extreme or the other according to his age, either deifying the sexual impulse, as in the unspeakable Phallic rites of antiquity (from which one of our now most sacred modern symbols, is more than suspected of being derived), or denouncing it as wholly sinful and degrading, at best a concession to poor weak human nature which may be tolerated because it cannot be suppressed. Between the Pauline attitude and the Black Plague of monasticism on the one hand, and the Phallic worship with its bacchanalian rites on the other, there is but little to choose, either as to rationality or actual moral results. And yet one or the other of these conceptions has usually dominated most ecclesiastical contributions to the solution of this question. Celibacy or virginity is still the ideal condition of the saint.

Without any wish to disparage others, it is my firm belief that the only class of men in the community who know the facts of the situation personally, and thoroughly appreciate the impulses and appetites which underlie them, are the members of our own profession. These underlying facts, however, have never been systematically collected, nor have many of us as yet thoroughly thought out the question to its ultimate terms. Hence, the extreme value of such a discussion as this which can hardly fail to produce results of permanence and far-reaching importance. Especially as the discussion can be perfectly frank and outspoken, which the secular press of any class dares not be, for fear of the awful shade of Mrs. Grundy, or the hysterics of the W. C. T. U. In "seconding the motion" for this professional experience-meeting, I beg to submit for approval or disapproval, a few suggestions as to the racial economics of prostitution, which usually, to my mind, are hardly given their proper weight. And perhaps I may be permitted to say, in introduction, that these tentative conclusions are based upon an investigation of the question, begun some years ago, in which after an exhaustive (and exhausting) discovery of the "plentiful lack" of either reliable statistics, or competent, unbiased opinions in the literature of the subject, the chief reliance was placed upon the responses to a large number of letters, addressed to the leading members of the profession in all the chief cities of the Union.

The vital questions of the problem are two in number; first, what class and character of men and women are affected by this institution? and, secondly, in what way are they affected? First, as to the women: The almost unanimous testimony of the replies received, as well as of the figures of Du Chatelet in Paris, is (*a*) that ninety per cent. of prostitutes are drawn from the lowest and most ignorant class of the population; (*b*) that they are led to this life by the desire for luxury, display, and idleness, a purely trade-instinct in fact, and *not* by strong sexual impulses, want, or seduction and desertion; (*c*) that their average life-time after entering this career is 9.5 years; (*d*) that during this period they are practically sterile; (*e*) that very few of them permanently reform, and those who do are extremely infertile. Now as to the men. Unlike the women they are drawn from no single class, condition, or age in the community, but from all alike. They are drawn into the vortex by an instinct it is true, but not a *natural* one—a *perverted* one. It is astonishing how little "passion" there is in the trade on either side. So far from the "hot blood of youth" being chiefly responsible, houses of ill-fame derive two-thirds of their income from married men over forty. In fact the essential "*Leit-motif*" of the practice is not the sexual impulse pure and simple, but the desire to indulge that impulse *and escape* its natural and legitimate consequence, conception. And in this respect women are just as much to blame as men. Many a man is driven to the brothel by his own wife. Three sources chiefly feed the reeking stream of prostitution, two of which are best characterized in the phrases, "can't afford to marry," and "don't want to be bothered with children," and the last and chiefest is limiting unduly the size of families. This is the civilized successor of infanticide, and like it, is the racial "sin against the Holy Ghost, which shall not be forgiven."

How are the supporters of this "institution" affected by it? The general impression is, especially in respect to the women, that they are rapidly killed by venereal disease and sexual excess, but upon gathering reliable facts we find the actual mortality from either of these causes decidedly low. Brain-syphilis and locomotor ataxia among the men, and gonorrheal peritonitis among the women, are almost the only actually fatal forms of venereal disease, and when we come to examine the "bogey" of "sexual excess" we are simply astonished to find how few permanently injurious results of any sort are produced by it. What, then, does shorten the life of the prostitute? My replies were absolutely unanimous upon this point and surprised me greatly. *Every* observer gives *alcohol* the first place, morphin, chloral, and venereal disease come almost together as bad seconds, suicide is fourth, and irregular hours and exposure next. Thus alcohol is found here, as elsewhere, one of the best friends of civilization. It is worth all the police systems and "missions" ever invented for the elimination of the criminal.

But although this vice has so comparatively little direct effect upon the life chances of its patrons, it affects them all with great force and certainty in another respect. It is a most efficient sterilizer. The prostitute, of course, for obvious reasons, seldom bears children during her "active" life, and usually becomes sterile sooner or later by endometritis or salpingitis, before alcohol or premature old age claim her. She seldom "reforms" (thank Heaven), and if she does, bears few children.

Now as to the man. Supposing he is infected with syphilis, what results? Under any circumstances or any treatment he is absolutely sterile for from two to seven years, either by abstinence or by the infection of whatever woman may be unfortunate enough to be his wife, during that time. Abortion after abortion occurs until viable children are born, but even then ——— ! Tarnier declares that eighty-five per cent. of syphilitic children die before the sixth month, Sturgis seventy-one per cent. As to gonorrhea, the revolution in professional opinion in this regard is simply startling. No longer regarded as a mere trifle, its effects are found to be appallingly widespread. Orchitis on the one hand and pyosalpinx on the other spring up in swarms in its wake like veritable dragon's brood. The despairing cry goes up, "It is doubtful whether gonorrhea is ever cured!" Here, again, justice may move with a leaden foot, but she strikes with an iron hand." That insignificant little infection gonorrhea, "of no more importance than a cold in the head," is found to be followed by a Nemesis of infirmity which is simply appalling.

To sum up then, from the female side of this institution, our conclusion would be that it is concerned principally with the most worthless variety of women, the degenerates or criminals, and the idle, the mercenary, and shameless of the working classes: in short, women whom the community can well afford to spare. That these women, when fairly in its grasp, are practically prevented from propagating their kind during their career, and rapidly destroyed if they remain in it. That very few marry, and those who do so are barren in a high degree; in short, it is an eliminative agency of high value and wonderful efficiency for first rendering sterile and then rapidly destroying the worst specimens of the sex—women whose "reform" and child-bearing would be a curse to the community. No need to spay the prostitute or castrate the criminal: they'll do it themselves if they are just given a little time.

To say that prostitution involves fearful and widespread suffering to innocent women and children would be as true as it is pitiable and harrowing, but "a companion of fools shall be destroyed" is no vengeful threat, but a simple statement of a stern necessary law, of highest value to the race. The only way to check its ravages is to reduce to the lowest possible limit the class upon which it is sure (and ought) to act. And the only agency of any value in this work is education, *education*, EDUCATION! Legislation is useless, "regulation" worse still. Awake society to the fact that the rake does *not* make the best husband, especially awake the "managing mammas," who are for the most part either shamefully ignorant and determined to keep their charges so, or as conscienceless, in these matters, as the slave-dealers of the Soudan.

Above and beyond all we should foster, glorify, deify if necessary, the one instinct in man's bosom which can master the sexual, the highest, the holiest, the strongest of which he is capable,—his love for the one woman who is, or is to be, all the world to him. Once touch this spring and he is safe. Well may all of clearest and deepest vision among us, the poets, never weary of singing its praises. The age of chivalry should be brought back in nobler, truer form. Lust laughs at opposition and exults in danger, but sinks ashamed at the whisper of love. Impress upon every man not his own danger, but that of his wife that is to be, of his children yet unborn. Nay, further, make him to see that the last insult he can offer to the one for whom he would cheerfully lay down his life, is to make, in the burning words of the apostle, her "members the members of a harlot." Do this, and prostitution will disappear from the face of the earth.

WOODS HUTCHINSON, M.D.

ECHOES AND NEWS.

Lord Lister and Professor Max Muller Honored.—Lord Lister and Professor Max Müller have been elected members of the Imperial Academy of Sciences of Vienna.

Diphtheria Antitoxin in Chicago.—The statistics of the Department of Health of Chicago credit diphtheria antitoxin with the saving of no less than 750 lives in that city during the year 1896.

Locusts as a Source of Poisoning.—Several cases of poisoning are reported from various towns in Pennsylvania, the result of eating the eggs and flesh of fowls which had been feeding on seventeen-year locusts.

The Death of Dr. Purshotum Dawda.—Dr. Purshotum Dawda, in charge of the Lohana Plague Hospital, was attacked with plague and died on the 1st instant. He is the fourth medical man who has died of the malady at Bombay.

Famine and Plague in China.—Recent advices from China say that the fatality from famine and plague in that country is appalling. The nature of the plague is not reported. Smallpox is prevalent in Tokio, Japan; also, in the island of Formosa.

The Potent Effects of the Word Hypnotism.—It is reported from New Haven, Conn., that a spiritualistic medium, when told that an expert hypnotist would be present at the next meeting of her society, went into a cataleptic condition, from which she had not recovered at the expiration of three days.

Two New Professorships at Columbia University.—At a meeting of the trustees of Columbia University, held June 8th, two new professors were appointed in the medical department—College of Physicians and Surgeons—namely, Dr. Jas. Ewen, Professor of Clinical Microscopy, and Dr. A. Brayton Ball, Professor of Clinical Medicine.

The Jubilee Number of the "Practitioner."—The *Practitioner* for June appears as a handsomely illustrated jubilee number, in commemoration of Queen Victoria's diamond jubilee, the whole number being devoted to an account of the advances made in medicine, surgery, and the allied sciences during the sixty years of her reign.

Johns Hopkins University Bestows the Degree of M.D. for the First Time.—Commencement exercises at Johns Hopkins University on June 15th were rendered unusually interesting by reason of the fact that for the first time in the history of the institution the degree of M.D. was conferred upon its graduates, fifteen in all. One of the graduates was a woman.

Imprisonment for Expectoration in Street Cars.—News comes from San Francisco, Cal., that W. B. Bradbury, the millionaire, will have to serve the sentence of twenty-four hours' imprisonment in the county jail imposed upon him on his conviction for the second time of expectorating in street cars. This decision has been confirmed by Judge Wallace of the Superior Court.

The Superintendent of a State Insane Asylum Removed.—Dr. George Allen, who was recently appointed superintendent of the Collins' State Homeopathic Hospital, Erie County, N. Y., has been removed by the Board of Managers. Dr. Allen was appointed to the position from the asylum at Middletown. The removal is the result of trouble over a question of appointment.

The Discovery of the Yellow-Fever Germ.—The announcement by Dr. San Arelli that he has found the true germ of the disease has awakened new interest in the bacteriologic origin of that disease. Physicians and scientists from Europe, as well as various parts of South America, are assembling at Montevidio, Uruguay, for the purpose of studying the life history of the germ and discovering an efficient germicide.

The New Harlem Hospital.—The site for the new Harlem Hospital of New York City, to be erected at a cost of $300,000, has been chosen by the Commissioners of Charities. The location selected is the block fronting on the east side of Lenox Avenue, between 135th and 136th Streets, and having a depth of 400 feet. Steps are being taken for the purchase of the property under condemnation proceedings.

The Membership of the Congress of American Physicians and Surgeons.—In our editorial of last week this Congress was described as "a body of some 600 men." This evidently placed the number at altogether too low a figure. The secretary of the Congress, Dr. W. H. Carmault, writes that there are 1157 active members, 41 corresponding members, and 109 honorary members, making a total membership of 1307.

The Generosity of Madame Charcot.—Madame Charcot, the widow of the late Professor Charcot, has relinquished the annual pension of 2000 francs (over $400) which she received from the State in favor of other widows and children of professors or *Agrégés* of the Faculty of Medicine of Paris who have died without leaving provision for their survivors. Madame Charcot has refunded all the money which she has received from the pension since the death of her husband.

A Dinner to Dr. H. A. Didama.—The faculty and the Alumni Association of the College of Medicine of Syracuse University gave an elaborate dinner on June 9th last in honor of Dean Henry D. Didama, M.D., LL.D., on the occasion of his fiftieth anniversary as a practitioner of medicine. After the menu had been satisfactorily discussed, a series of interesting after-dinner speeches were indulged in under the supervision of the toast-master, Dr. Nathan Jacobson of Syracuse.

The Roentgen-Ray Diagnosticates a Broken Neck.—It is reported from Camden, N. J., that a boy nine years old fell from a tree recently with serious consequences. Upon striking the ground, the boy lay limp and unconscious, with blood running from his mouth. Later, paralysis of the lower limbs developed. A diagnosis of dislocation of the spine was made. This was confirmed by the Röntgen-ray, which showed the spine dislocated in three places. The boy has continued to live for a week since the accident.

Yellow Fever at New York Quarantine.—One death has occurred among the second-class passengers detained in quarantine at New York. After proper detention and thorough disinfection, the remainder of the passengers have been dismissed. The Health Officer, Dr. Doty, regards five days as the safe limit during which passengers subject to infection should be kept under observation. Dr. Doty says: "Epidemics of yellow fever have been prevalent during the last two and a half years in Rio Janeiro, Santos, and Cuba, and in spite of the constant arrival here of ships from these ports, not a single case of yellow fever has entered New York."

A Bill to Provide Expert Witnesses.—It is said that a bill has been introduced in the Minnesota Legislature providing for the appointment of expert witnesses, and that the homeopathic physicians have, with legal advice, prepared a bill to be presented in the New York Legislature. The object of the bill is to provide a list of experts from whom witnesses are to be selected by the Court and paid by the State. The employment of expert witnesses by the counsel of the prosecution or defense has been unfortunate both for the courts and for science. It would certainly be desirable to devise a plan by which the expert witness should be in the position of a judge rather than that of a paid attorney.

New Measures of the New York Board of Health to Guard Against Hydrophobia.—The New York Board of Health has arranged to investigate every case of supposed rabies reported in the city. All policemen are instructed to report every case to the Board of Health. The Health Department ambulances will then take the animal to their laboratory for examination. Cultures will be made and injected into rabbits, guinea pigs, and other animals. This will definitely determine whether hydrophobia is to be feared as the result of any individual dog's bite. People see a dog frothing at the mouth and at once rush to the conclusion that it is mad, forgetting that a dog perspires at the mouth, and that its frothing at the mouth may simply mean that it is hot or excited, or the dog may have fits.

New York Newsboys Not Physical Prodigies.—Forty boys from a newsboys' home in New York City were marched over to the Navy Yard recently to be examined for admission to the navy. They ranged in age from fifteen to eighteen years, with records for physical prowess, the superintendent of the home said, that would entitle them to prominent positions in any fighting detachment. The boys were all jubilant at the prospect of becoming sailors. They were put through the severe physical examination to which applicants are subjected, and with surprising results. Out of the forty applicants thirty-eight were rejected on account of physical defects. The cause of rejection of most of the candidates was the unsoundness of their teeth. One boy's skull was discovered to have been cracked and mended at some period of his life. He was rejected.

The Death of Dr. George F. Edwards.—A most pathetic incident of the commencement exercises at Princeton University last week was the presence there and the death of Dr. George F. Edwards. Dr. Edwards during his college days was a famous character, hail-fellow-well-met with the members of all the classes, possessed of a fund of good nature, witty, loyal, and generous. He was no class man in a strict sense, but belonged to all classes. He was received with open arms at all the *fêtes*. He graduated in the class of '89. Subsequently he entered the medical department of the University of Pennsylvania, where he was graduated with honors. After a brief service in the Presbyterian Hospital in Philadelphia, he went to Johns Hopkins University and began the study of tuberculosis. While there he was infected with the dread disease, the first signs of the malady appearing in him about three years ago. Then began the fight for life. He went to the Pacific slope in quest of health, but the disease had too tenacious a hold upon him, and he realized he had not much longer to live. The pleasantest experiences of his life had been at Princeton College, and his desire was to see once more the scenes of those good times, to spend a few hours in old East College where he had roomed, to witness a struggle on the baseball field with Yale, to attend another Ivy dinner, and then pass away. All these desires were realized, and then the end came in the old room in which he had spent happy years. His final will was made there by which he left a handsome sum to a negro boy, whom he had befriended and educated, and the balance of his fortune, amounting to $150,000, to Princeton University.

CORRESPONDENCE.

OUR PHILADELPHIA LETTER.

[From our Special Correspondent.]

SUMMER WORK IN THE CLINICS—A SCHEME TO AID "BACKWARD STUDENTS" IN PASSING THE STATE BOARD OF MEDICAL EXAMINERS—SECTION ON GENERAL MEDICINE, COLLEGE OF PHYSICIANS OF PHILADELPHIA—A FOUR-YEARS' COURSE AT THE MEDICO-CHIRURGICAL COLLEGE—THE PHILADELPHIA HOSPITAL EXAMINATIONS.

PHILADELPHIA, June 19, 1897.

WITH the closing of the various medical schools and the final meetings, until the fall, of the more important medical societies, it would seem to the casual visitor that the medical world of Philadelphia has settled into a three-months' summer desuetude; but, although surface indications may point to a state of *laissez aller* when contrasted with the work of the great clinics during the winter months, one has only to drop into any of the large hospitals on clinic days to obtain evidence of the fact that, though many of the leaders have exchanged stethoscope and scalpel for rod and oar, much valuable and earnest work is being carried on during these hot months by the younger men of the profession, and in a manner which ensures not a few of them a future high place in their calling.

In many ways these summer clinics offer to the student advantages which it is obviously impossible to present during the crowded winter terms. Brilliant didactic lectures, and equally brilliant clinical teaching is not to be found, it is true, but, on the other hand, the summer student may freely avail himself of such advantages as close personal contact with both patient and teacher, and an intimate acquaintanceship with the ins and outs of the operating-room and the routine at the bedside, and learn for himself many points which would be missed or unappreciated by a listener on the benches. That this individual instruction is valued by the knowing student of medicine is shown by the good attendance at the regular summer courses of the medical schools, and at the clinics and operations at the various hospitals.

Covert cheating in examinations, whether in a preparatory school, university, or technical school, has always existed to a more or less degree, and will doubtless always continue to exist, except in those institutions in which the students have voluntarily pledged themselves to discountenance "cribbing." Unfortunately, the medical student body is no stranger to this evil, as the facts attest in the wholesale attempts at cheating in the examinations now being held in this city by the State Examining Board for licenses to practise medicine in Pennsylvania. It would seem that an enterprising but unscrupulous ex-student of medicine contracted to furnish those candidates whose mental capacity and standard of honesty happened to fall a bit below the standard with complete "ponies" for the ordeal, at the rate of three dollars for a set covering all the branches of medicine. These "aids to backward students" consisted of small double rolls of paper, on which were printed in very fine type quite an accurate compendium of the different branches, and of a size which permitted their manipulation while held in the palm of the hand.

Many of these "ponies." were sold during the weeks preceding the examination, but the traffic finally became so open and so extensive that, thanks to the efforts of a daily newspaper whose reporter himself purchased one of the incriminating paper rolls, the Examining Board became aware of the matter, and took prompt measures to circumvent the scheme. The result of their vigilance was that a number of candidates were detected using the "ponies" and were unconditionally expelled from the examinations. It is said that there were found on the floor of the examination-room, at the close of the examinations, quite a collection of fragments of "cribs" and other bits of paper indicating that the number of guilty candidates was not small.

The last stated meeting until September next of the Section on General Medicine of the College of Physicians of Philadelphia was held on June 14th. Dr. H. A. Hare made a few remarks on "The Value of the Various Preparations of Digitalis," during the course of which it was explained that of the substances isolated from this drug, digitalin, digitalein, and digitoxin exerted a decidedly tonic influence on the heart, and also at times might be capable of producing spasm of the renal vessels; while digitonin acted as a cardiac, depressant, and renal stimulant. He thought that some of the conflicting reports as to the action of digitalis could be explained by the different preparations used, and by the varying physiologic actions of the same preparations made by the various manufacturers.

Dr. J. C. Wilson read "A Brief Statistical Paper on Enteric Fever in Children, based upon 150 Hospital Cases." This paper comprised fifty cases of enteric fever treated at the Mary J. Drexel Home connected with the German Hospital and one hundred cases from the records of the Pennsylvania Hospital during the last twenty-five years. After logically deducing the important facts connected with enteric fever in childhood, Dr. Wilson showed that the mortality in children under fifteen years of age averaged four per cent., and that in young children the fever was less marked, the duration of the disease was shorter, and that relapses were rare.

Dr. C. W. Burr reported an interesting case of osteomalacia.

It is announced by the Board of Trustees of the Medico-Chirurgical College that, beginning with the coming session of 1897-98, the college course will be lengthened to four years. By the action of this institution all the medical schools of this city now require a compulsory four-years' course for the doctorate, this requirement having already been inaugurated by the Medical Department of the University of Pennsylvania, the Jefferson Medical College, and the Woman's Medical College.

Food for reflection may be found in the results of the examinations recently held for the positions of resident physicians in the Philadelphia Hospital. Of the ninety-five applicants examined, but twenty-one attained the average of seventy per cent. necessary to place them on the eligible list. Some seek to explain the results by the rigidity of the examination, some attribute it to the mental caliber of the applicants, while others place the blame on an indefinite combination of circumstances such as have been known to carry failure to the best of students. But the questions this year were not particularly difficult, the average graduate of this year's classes is certainly as bright as his classmate of a year ago, and the latter reason is too intangible for consideration. The fact, therefore, remains unexplained that only about twenty-two per cent. of the applicants reached a grade of seventy.

ANNOUNCEMENT.

TWELFTH INTERNATIONAL CONGRESS OF MEDICINE.

TO BE HELD UNDER THE HIGH PROTECTION OF HIS MAJESTY, NICHOLAS II., AND THE AUGUST PATRONAGE OF HIS IMPERIAL HIGHNESS, GRAND DUKE SERGE ALEXANDROVITCH, AT MOSCOW, AUGUST 19–26, 1897.

THE Committee of Organization of the Congress has received from the Minister of Transportation nearly 7000 free first-class tickets, which it holds at the disposal of the members of the Congress for their journey to and from Moscow.

These tickets have been offered to the Committee of

Organization by the minister under the following conditions:

1. The Committee of Organization, in sending each ticket to the member of the Congress for whom it is intended, will write upon it his family name, the place from which he will take his departure, and, if the member is a foreigner, the first station on the Russian frontier; also, the route he will follow to reach Moscow and to return.

2. Aside from this, the Committee of Organization will furnish members of the Congress with a certificate indicating that the bearer has paid his assessment and is really a member of the Congress. These certificates shall, on demand of the conductor of a train, be presented to him by the bearers thereof.

3. No ticket will be good for the return trip from Moscow unless it has been furnished by the Committee of Organization with a stamp indicating that "the bearer has attended the International Congress."

4. The names of the members of the Congress may be written, according to the decision of the Committee of Organization, not only in Russian but also in a foreign language.

5. The tickets to Moscow should be presented at the ticket office of the place of departure, or at the first station on the Russian frontier, in order that the stamp of the train may be affixed. On the return trip these tickets are to be presented at the Moscow railway station, where the stamp of the day of departure (old style) will be affixed.

6. The tickets will be good from the 1st to the 13th of September of the present year.

7. Every bearer of a ticket will be allowed to carry free sixteen kilograms of baggage.

8. As soon as the Committee of Organization shall have given notice of the time of arrival at the frontier station of the members of the Congress and their number, the Board of Directors of Railways will make arrangements to permit them to reach Moscow as comfortably and speedily as possible. The same arrangements will be made on their departure from that city.

In accordance with these conditions, in order to have a free ticket, each member of the Congress should inform the Secretary-General of the route which he will follow to and from Moscow.

The Executive Committee has the honor to add that ladies and other persons not having scientific titles, who accompany members of the Congress (Section 3, Rules of the Congress), cannot be designated as being in attendance. They pay no admission fee and do not receive free tickets on the lines of the Russian railways.

Death of Professor Charteris of Glasgow.—Professor Charteris, of the Chair of Materia Medica in Glasgow University, died on June 7th. He was living at Comrie, in Perthshire, having obtained leave for the summer session, in order to recuperate after an attack of influenza. His illness took a decidedly serious change on Sunday, and he died on the following day, soon after the arriva of one of his colleagues.

SOCIETY PROCEEDINGS.

AMERICAN MEDICAL ASSOCIATION.

The Semicentennial Meeting, Held at Philadelphia, June 1, 2, 3, and 4, 1897.

SECTION ON PRACTICE OF MEDICINE.

(Concluded from page 848.)

FOURTH DAY—JUNE 4TH.

The following resolution was unanimously adopted;

"*Resolved*, That Professor Welch and others who took part in the discussion on sero-diagnosis be appointed a committee to draw up a brief statement of the consensus of opinion arrived at through this discussion, this statement to be published in the *Journal* of the Association in connection with the report of the discussion."

Pursuant to the provisions of this resolution the following committee was appointed: Drs. Welch of Baltimore (chairman), Wyatt Johnston of Montreal, R. C. Cabot of Boston, W. H. Bloch of Baltimore, H. M. Biggs of New York, S. S. Kneass, J. H. Musser and John M. Swan of Philadelphia, Mark W. Richardson of Boston, N. S. Davis, Jr., of Chicago, and A. P. Ohlmacher of Cleveland.

The regular session was opened by a discussion on GOUT, inaugurated by DR. WOODS HUTCHINSON of Buffalo. He said that gout is one of the most protean of diseases in its manifestations, a perfect Pandora's box from which every variety of ailment might escape to attack every organ in the body. As manifestations of the lithemic diathesis, and thereby closely allied in their causation to gout, might be mentioned dyspepsia, which is largely of lithemic origin, neuralgia, and hay fever, often due to the presence of uric acid, while two-thirds of the cases of rheumatism can be traced to the same cause as gout. Many inflammations of the bladder have a similar origin, while laryngitis and pharyngitis are also manifestations. Bright's disease is due to the same cause, and the weakening of the arterial coats in this malady is the work of uric acid. The uric-acid diathesis is very closely allied to the vital processes, and though the term is inexact, it is better to stick to a term that is known to be wrong rather than to search around for another that will be no nearer right.

Lithemia is quite common in some animals, while it is rare in others. Those in whom hippuric acid is formed are not subject to lithemia, and among these might be mentioned parrots and domestic fowls. On the contrary, those animals that form uric acid are subject to the lithemic diathesis. Urea is a comparatively harmless substance, while uric acid is very poisonous, and therefore the deposits of bony material in a gouty joint may be regarded as a decidedly conservative process. The inflammation in the joint stimulates the formation of fibrous tissue, and this process is analogous to the building of coral reefs by the coral insect, and to the throwing out of calcareous matter for the formation of a shell by mollusks. It is a defensive process. When there is an abundance of lithemic cells in the system there are fibrous deposits. There is an antagonism between the uric-acid diathesis and tuberculosis.

In the matter of treatment, the essential thing is to keep the patient up to a proper condition, and the way to accomplish this is by exercise, exercise, and more exercise. If a man would observe the direction given by Abernethy to "live on a shilling a day, and earn it," he would never suffer from gout.

Dr. Charles Stockton of Buffalo spoke of the "Gastro-intestinal and Hepatic Relations and Manifestations of Gout." He said that he and Dr. Hutchinson agreed in many particulars, but differed in others. After listening to Dr. Hutchinson he was always inclined to doubt his own experience, but in the present instance he hoped to break down at least one of his contentions. Discussing the causation of gout, the question arises as to whether lithemia is gout, or whether the disease is the result of a toxemia due to disorders of the digestive functions, including the liver. The fact that relief of the gouty symptoms does not follow a treatment directed to the gout itself, but that they disappear upon regulation of the diet, points to the latter hypothesis as the correct one. The fact that outbreaks of gout follow indiscretions of diet in gouty patients is also suggestive. The regulation of the diet should be based upon a study of each individual case, for some persons do well on albuminous diet and badly upon a nitrogenous one, while others improve upon a nitrogenous diet but get worse upon an albuminous one.

Dr. Charles A. Oliver of Philadelphia next discussed "Gout as it is Manifested in the Special Senses," confining himself entirely to its effects upon the eye. The symptoms of gout, as seen in the eye, are those of swollen and angry-looking lids, and inflammation of the conjunctiva, but without ulceration. As Dr. Hutchinson had said, the treatment for the general manifestations of gout is exercise, exercise, and more exercise, and the treatment for its manifestations in the eye should be the application of heat, heat, and more heat. Desquamation of the corneal epithelium is frequently noted, and infarctions in the Meibomian glands are not uncommon. The inflammation set up in the eye by the gouty diathesis may be carried back into the ciliary body. The vessels in the back part of the eye may become very much enlarged, and almost macroscopic in size. Entire blindness never results, but there may be central blindness. Inflammation not only exists in the orbit, but may extend back into the optic chiasm itself.

"The Relations of the Alloxur Bodies to Gout, or a Uric-Acid Diathesis, with Demonstration," was discussed by **Dr. T. B. Fletcher** of Baltimore.

Dr. F. S. Pearce of Philadelphia discussed the question of "The Relation of Uric Acid to Neurasthenia," and came to the following conclusions: (1) That the amount of uric acid present in cases of neurasthenia is less than normal, and that disturbed metabolism is the cause of many of the symptoms; (2) that interference with the exudation of the products of uric acid is the cause of many of the secondary symptoms; (3) that an increase of uric acid may cause an exacerbation of the symptoms; (4) that neurasthenia is not always due to uric acid but to a perverted metabolism and to idiosyncrasy; (5) that uric acid must exert a considerable influence on neurasthenia; (6) that back of all these exciting causes is the predisposing cause of excitable neurons; (7) some of the severe headaches in neurasthenics may be due to the infection of the meninges; the presence of uric acid may also explain the severe occipital pain experienced by some neurasthenics which eye treatment has failed to relieve; (8) that in the treatment of uric-acidemia the use of alkalin mineral waters and of baths is useful.

Dr. H. C. Wood of Philadelphia spoke on "The Treatment of Gout." He was expected, he said, in the course of fifteen minutes to epitomize the wisdom of ages. All the scientific knowledge of gout at the present time amounts to little more than a mass of "mumbling explanations," upon which should be built up a true knowledge of the disease. There are three great manifestations of lithemia — articular rheumatism, rheumatoid arthritis, and podagra, or true gout. He traced the genealogy of a case of gout through four generations, beginning with the great-grandfather, who acquired true podagra in England—a form practically unknown in this country, which passed through four generations, manifesting itself in various ways, until it culminated in the great-grandson in attack after attack of acute rheumatism. It was not the same disease in each person, but it was the same element which had been eluding the grasp of the profession for a hundred years. Until the profession purges itself of the false knowledge of gout which it thinks it possesses, and recognizes the great principle that it is not the gout which should be treated, but the individual with gout, no advance will be made in the treatment and cure of this condition.

Exercise is better than drugs. Colchicum will do good in cases of typical gout, but these do not occur in this country. In order to get results from these drugs it is necessary to give "knock-down doses" of the salicylate of colchicum. In the administration of salicylic acid the profession has long been accustomed to give it in the form of salicylate of sodium, which is not so objectionable as the salicylic acid and soda given separately; but he has had better results from the use of the salicylate of ammonium and salicylate of strontium, giving the ammonium salt in acute cases and the strontium salt in subacute cases. Sometimes he combines them. Baths have been recommended, but he does not see how they can accomplish anything, as "it would be necessary to take a Turkish bath every hour in order to wash away the ancestral vice" in cases in which the disease has endured for several generations.

"The Cardio-vascular and Renal Relations and Manifestations of Gout" were discussed by **Dr. N. S. Davis, Jr.**, of Chicago.

Dr. James Tyson of Philadelphia said that gout is a disease to which he has given much thought and in the treatment of which he has had much experience. No disease is so carelessly diagnosed as gout, and one of the symptoms on which a diagnosis of gout is most frequently based is the appearance of Heberton's nodosities, which, in reality, are not a symptom of gout at all but occur more frequently in rheumatoid arthritis. He agreed with Dr. Stockton that uric acid in the urine is not always a symptom of gout, but when a man is known to have a gouty diathesis it is safe to call all unusual symptoms manifestations of gout. For the treatment of gout he advocates the use of alkalin mineral waters between the attacks. Gout cannot be cured, but its manifestations may cease, and the constant effort of the physician and patient should be directed to keeping them in abeyance. The best waters for this purpose are the foreign Vichy and Baden waters, for there are no true mineral waters in this country. Of course the diet should be attended to. In the medicinal treatment of gout he has obtained the best results from the use of salicylate of soda, but recently he has gone back to the old custom of giving salicylic acid and carbonate of soda. Sometimes he uses the salicylate of strontium.

A paper was read by Dr. David Riesman of Philadelphia upon

RHEUMATOID ARTHRITIS.

He prefers the term "osteo-deformans," as recommended by Virchow, and regrets the fact that the profession does not know as much about the pathology of rheumatism as it does of diphtheria and other diseases. Next to the pain in the joints, the most striking feature in rheumatoid arthritis is the atrophy of the muscles connected with the affected joint. He divided the disease into (1) Osteo-deformans of the severe type; (2) osteo-deformans of a mild type; and (3) localized deformans. Heberton's nodes are more common in women than in men, and frequently begin to develop at the menopause. He has also known Heberton's nodes to develop shortly after an attack of diphtheria. Three explanations have been given for the condition: (1) That it is due to a complication of rheumatism and gout; (2) that it is of nervous origin; (3) that it results from a specific germ. The treatment should be directed toward preventing contracture of the affected joints by the application of an extension apparatus. He was convinced that some of his cases would have become helpless cripples but for this extension. The medicinal treatment consists in the exhibition of strontium bromid, which, he believes, possesses the power of limiting the disease.

A discussion on Anemia followed, opened by a paper by Dr. Alfred Stengel of Philadelphia, which was read by Dr. A. E. Taylor of Philadelphia. Anemia is dependent upon something more than a diminution in the quantity of the blood; an alteration in the blood plasma, and in the number and distribution of the corpuscles will be found to exist. This is shown by the experiment of bleeding a dog of one-third of his volume of blood, and examining the remainder at intervals. It will be found that there is a dilution of the remaining blood plasma, and that the specific gravity drops several points. Alterations in the number of red blood-corpuscles is not now considered the important factor it was once held to be. Distribution of the corpuscles in the plasma is of more importance. Anemia is considered to be a deterioration of the blood, with an alteration in its solid constituents. The classification of anemia is difficult, the usual division being into primary and secondary. Pernicious anemia is a secondary disease, and is not considered to be due to any disorder of the hemopoietic system, but is a consequence of syphilis, rickets, chlorosis, and the like. It can be distinguished by the examination of the blood alone, notwithstanding the assertion of the clinicians that this is impossible owing to the fact that other diseases show similar results. In fatal cases of pernicious anemia complete autopsies have failed to show any cause for the condition aside from the fatty degeneration of the heart. He thought that the term "splenic anemia" should be dropped. The treatment by bone marrow has been very unsatisfactory in his experience.

Dr. A. E. Taylor of Philadelphia spoke of "The Alterations in the Blood, and Methods of Determination." The blood for examination should be obtained by venepuncture, though the blood obtained from a puncture of the finger, or lobe of the ear, will do very well for a blood count. He has not found centrifugation an accurate procedure, and the Fleischl hemometer is also unreliable. A decrease of red blood-corpuscles is not of vital importance, as the blood, under all circumstances, is always able to carry more oxygen than the system needs, so it seems that the hemoglobin must have some other function than to carry oxygen. He had reached the conclusion that the estimation of the specific gravity of the blood, and not of the hemoglobin, is the important factor in blood examinations, and that the mechanical study of the blood is of more value than the microscopic study.

Drs. S. M. Hamill and D. L. Edsall of Philadelphia presented a paper on "The Salivary and Gastric Functions as Modified in Anemia."

Dr. Wm. Campbell Posey of Philadelphia discussed "Disorders of the Organs of Special Sense in Anemia," confining his remarks to the manifestations of the disease as seen in the eye.

Dr. Judson Daland of Philadelphia said he was glad the point had been brought out that blood should be taken from the veins and not from the finger or lobe of the ear. He was also pleased to hear that Dr. Taylor had noticed the inaccuracies of the Fleischl hemometer, for he had found it difficult to come within ten per cent. of a correct count with this instrument. He hoped that some method of overcoming this objection would soon be devised.

Dr. Max Einhorn of New York read

A FURTHER REPORT OF ISOCHYMIA (DILATATION OF THE STOMACH).

He divided his cases into two classes: (1) Those requiring an operation, and (2) those treated by palliative measures. He has had ten patients operated on for benign stricture of the pylorus, and in one case there had been no dilatation of the stomach made out, nor had there been any vomiting. The diagnosis had been made from the fact that part of the food remained behind in the stomach after the normal period of digestion. In the washing water of the stomach there were also black specks, indicating that there was an ulcer of the stomach. Operation was decided upon on account of the stagnation of food, and the ulcer was excised. The patient recovered and began to gain in weight. This case shows that it is not safe to place much importance upon the size of the stomach. He reported the cases of ten patients with benign stricture of the pylorus, eight of whom recovered and two died. Of the eight reported cured, seven were entirely cured and one was partially cured. In some of the cases of malignant disease the diagnosis had been made from the microscopic examination. If the symptoms do not improve under medical treatment, surgical interference is called for. One of the symptoms of isochymia is retention of food in the stomach, and if this occurs frequently the diagnosis can almost be made from this alone. If this retention of food occurs from stenosis of the pylorus, it should be determined whether this is due to a benign or a malignant cause. In cases of stenosis of the pylorus liquid diet should be ordered, and in serious cases the patient should be nourished by the rectum. His conclusions were that in the majority of cases of isochymia narrowing of the pylorus exists; that the most frequent form of isochymia is dilatation of the stomach; that isochymia produced by malignant tumors should be promptly operated upon; that when not dependent upon a malignant growth an effort should first be made to give relief by palliative measures.

RELATION OF FAT NECROSIS AND THE PANCREAS

was the title of a paper read by **Dr. H. U. Williams** of Buffalo. He said that in the eighty cases upon which his paper was based he had seldom seen any carcinoma of the pancreas, and peritonitis was not usually present. He described his experiments on dogs and cats by which he had produced an inflammation in the pancreas by tying off the organ and lacerating it with hooks.

Dr. James Tyson of Philadelphia made a few remarks upon

THE DIAGNOSIS OF ABDOMINAL EFFUSION AND GROWTHS,

dwelling especially upon the occurrence of tympany in the flanks and presenting models to show how this was to be explained. The occurrence of this phenomenon in several of his patients with abdominal tumors had somewhat mystified his assistants, and had masked the presence of the tumors. In spite of this confusing symptom he had diagnosed the presence of tumors with ascites, and had drawn off seven pints of fluid in two tappings.

THE TREATMENT OF CANCER BY ZINC MERCURIC CATAPHORESIS

was the title of a paper by **Dr. C. B. Massey** of Philadelphia. He gave the histories of several patients treated in this way with perfect success, and exhibited a patient whom he had treated several years ago, and who appeared then to be dying from a sarcoma of the roof of the mouth. The growth had recurred, however, and though it was much smaller than when he operated upon it before, he was now going to perform a second operation. The operation was almost painless, was prompt, bloodless, and complete.

Dr. J. D. Steele of Philadelphia reported a

CASE OF PRIMARY RENAL TUBERCULOSIS,

and read a paper with that title.

Dr. Matthew Woods of Philadelphia read a paper upon his

EXPERIENCE IN THE TREATMENT OF EPILEPSY ACCORDING TO THE METHOD SUGGESTED BY NIEMEYER.

The closing paper of the session was entitled

MEDICINE AS AN EXACT SCIENCE,

and was read by **Dr. W. J. K. Kline** of Washington.

A vote of thanks was then extended to the Chairman, Dr. Musser, for his able management of the business of the section, and the meeting was declared adjourned.

Section on Obstetrics and Gynecology.

(Concluded from page 809.)

Third Day—June 3d.

Dr. Lewis Schooler of Des Moines read a paper on

VAGINAL SECTION IN EXTRA-UTERINE PREGNANCY.

He said that many of us had been taught that the diagnosis of ectopic pregnancy was impossible, and that hence, as there was no diagnosis, there was no treatment. Today we can make a diagnosis with remarkable accuracy. The advantages of the vaginal route are greatest when pus abounds, as infection of the peritoneal cavity follows more certainly if the abdominal route is adopted. The operation is short, and should not be followed by shock or secondary hemorrhage. The bleeding points are also directly under the eye. If the vaginal wall is incised and irrigation and drainage is used, nothing is sacrificed by the operation, whereas abdominal section necessarily implies a sacrifice of ovary and tube. It is urged by some that herniæ are as frequent in the vaginal operation as after the abdominal. This is not true. Healing by first intention in the vaginal operation is not expected, while healing by granulation is encouraged. The strongest argument against the vaginal operation is that it is not a definite operation; that damaged structures are left behind, and that part of the disease is beyond the reach of operation; also, that in pus-cases a cure is not effected and abdominal section is at last the only source of relief. In other cases only a small amount of relief is gained. On the other hand, the abdominal operation is radical, and important organs are too freely sacrificed.

Dr. M. Price of Philadelphia read a paper, entitled

EXTRA-UTERINE PREGNANCY, WITH REPORT OF CASES.

He exhibited a specimen of ectopic gestation at the fourth month, which he said beautifully illustrated the impropriety of the vaginal operation. In all cases of ruptured pregnancy with hemorrhage and shock the accident invariably occurred before the twelfth week. Even those cases which go to term have ruptured at some time, and all these pass through the hands of the general physician. Many of them perish of hemorrhage, septic peritonitis, or obstruction of the bowel because the physician fails to recognize the conditions. Some recover in spite of lack of treatment. These are classed under the head of hematocele. In his own work and that of Dr. J. Price, covering over 175 cases, he has only seen one variety of ectopic pregnancy, namely, the tubal. He has yet to see the first case developing in the broad ligaments. The symptoms are almost pathognomonic. There is usually a history of sterility for a number of years, after which the symptoms follow, *viz.*, sick stomach, intense pain, collapse, and hemorrhage after the second month or a slight discharge as in miscarriage, and after the twelfth week a shedding of almost the entire lining of the uterus. In the case he reported, the patient had an intense feeling of impending death. He thinks we can do no better than to follow the teachings of Lawson Tait. In the last few years it is rare to find a case of extra-uterine gestation in which a diagnosis has not been made. How do these cases go to term? In two cases of Dr. J. Price, both children living, they were enclosed in the amniotic sac, and in one case of his own, at the tenth month with a living child, the amniotic sac also existed. In rupture we operate and find everything but the child, because here the sac is ruptured and the fetus has escaped. The cases can only go to term when the sac fails to rupture. In the case mentioned the placental site extended from the corner of the uterus to the diaphragm, covering everything on the left side of the abdomen. To remove this would have been instant death from hemorrhage. As soon as the diagnosis is made, immediate operation is indicated to avoid the daily and hourly increasing danger to the patient. If the placenta is so fixed that we can remove it radically, although with great risk, we should do so. This failing, clean the face of the placenta, wash out the cavity, and close hermetically, trusting to the future.

Dr. J. Wesley Borée of Washington, D. C., read a paper on

THE VAGINAL ROUTE IN THE SURGICAL TREATMENT OF RUPTURED TUBAL PREGNANCY.

The best variety for the vaginal operation is where the hemorrhage has not been severe, but where the omentum or bowels have prevented upward growth into the abdominal cavity. In these cases, incision through the vagina back of the cervix is the best method. The difficulty lies in differentiating between cases suitable for vaginal and those suitable for abdominal section. In all cases, therefore, the operator should hold himself in readiness to finish through an abdominal incision. He has done six cases by the vaginal route, all promptly recovering without unpleasant symptoms.

Dr. Philander A. Harris of Paterson, N. J., presented a paper on

CLOSURE OF THE ABDOMINAL INCISION.

He stated that probably no condition calls for a secondary operation so frequently as hernia. Until within the past few years through-and-through suturing was the common method employed. He believes, as a routine practice, in first suturing the peritoneum by a modified Lembert's suture with fine catgut, then the aponeurosis with chromicized catgut, next the muscle, and finally the skin and superficial fascia. He employs an interrupted stitch for the aponeurosis. For the skin he does not think it matters what we use; personally, he has been accustomed to employ the so-called Halsted subcutaneous suture. By using kangaroo tendon and not the non-absorbable suture, he avoids abscess and pain. As to the particular structure that produces the tensile strain, it is probably mainly the aponeurosis of the transversalis muscle.

Dr. Franklin H. Martin of Chicago read a paper, entitled

TREATMENT OF RETROVERSION OF THE UTERUS,

in which he gave an amusing satirical review of the discussion of Dr. Clarke's paper. He claimed that no scientific gynecologist should adopt any routine treatment for retrodisplacement, but should vary the treatment to suit the case. The men who condemn Alexander's operation are those who have not done it frequently enough to understand it. No one should express his opinion until he had done at least 100 operations, when he could not condemn it. Hernia never results from Alexander's operation. The operation has but a small range of usefulness, namely, in retroversion without adhesion or surrounding inflammatory conditions. It should not be done in prolapse unless the support is restored by a simultaneous operation. The round ligaments prevent retrodisplacement. He ties the two ligaments together under the skin over the pubes, thus shortening them. Ventrofixation is of service in women who will not become pregnant. He employs Fowler's operation in doing the fixation, in which the urachus is made to support the uterus.

Dr. J. J. Maker of New York presented a paper on

ONE HUNDRED CASES OF ATRESIA AND STENOSIS OF THE VAGINA IN LABOR, THIRTEEN OF WHICH WERE FATAL.

These cases were gathered from the most recent medical literature. The common causes of atresia were transverse membranes or septa, tubular contraction, and transverse bands. He classifies the cases as membranes or septa, stenosis, and bands. There were forty-five contractions in the middle third of the vagina, and some cases in which the site of the atresia was not mentioned, it is probable that ten additional could be placed here in the middle third, making probably about 60 to 65 per cent. of the cases. In 15 of the membranes no opening was found, 31 were firm, 12 cicatricial, 10 cartilaginous. In 20 cases the obstruction measured in thickness 1½ to 12 mm.; in 4 there was stenosis of the entire vagina, and in 1 of the anterior half. As to causation, 42 cases were congenital, 45 post-partum. Operations on the pelvis, forceps, cephalotomy, embryotomy, rough removal of the placenta, tedious labor, were all mentioned as causes. Four cases were traumatic. The post-operative cases came from attempts to close vesicovaginal fistulæ. There were 33 complications, with deaths of seven mothers and twenty children. There were 4 cases of rupture of the uterus; 67 cases were treated by incision, with seven maternal deaths. In 2 cases the thermocautery was used. In 13 cases the septa were ruptured by the advancing head. Embryotomy was done in two cases, with death of both mothers. The fact that between 70 and 80 per cent. of the cases were found in the middle third of the vagina would indicate some increase in the muscular tonus of this portion. The proper course to pursue is to obliterate the obstruction as soon as discovered during labor, or before labor if possible.

Dr. J. H. Kellogg of Battle Creek, Mich., read a paper, entitled

RATIONAL GYNECOLOGY,

in which he briefly called attention to a class of conditions which does not attract the attention it deserves. He claimed that pelvic disease is not always purely local. The surgeons forget this, and often remove a hypersensitive ovary or perform a hysterectomy because the patient is suffering from general nervous exhaustion. From a study of his case-book he finds that 52 per cent. of the cases showed displacement of the abdominal viscera without associated displacement of the pelvic viscera, and only 6 per cent. showed the reverse condition. Visceral displacement in pelvic cases, therefore, is not a distinct pathologic entity, but is associated generally with displacement of the abdominal viscera as a primary cause. Rational gynecology therefore, includes the treatment and restoration of the abdominal viscera as well. He believes that the backache and other symptoms are due to general visceral prolapse, and not merely to displacement of the pelvic organs. Retrodisplacement is favored by lack of obliquity of the pelvis.

Dr. J. F. Baldwin of Columbus read a paper on

THE TECHNIC OF ABDOMINAL HYSTERECTOMY,

in which he said that the abdomen is opened in the usual way by as free an incision as is necessary. The adhesions are freed, the uterus is drawn up into the incision, and the most accessible broad ligament drawn out and the ovary cut loose after the application of a clamp. The other ligament is treated in the same way. Clamps are then applied below, and anterior and posterior flaps of peritoneum made, the broad ligaments are then separated, and the uterine arteries found and ligated. A V-shaped division of the uterine body is then made. In suitable cases he ligates on one side and then removes the mass according to Kelly's method. The patient is then placed in the Trendelenburg posture, and the uterine arteries found, drawn out, and ligated. The round ligaments are then caught with forceps and the clamp removed from the broad ligament. The ovarian arteries are then drawn out and ligated. Gauze is passed down through the cervix into the vagina. He closes the peritoneal flaps over the cervix with kangaroo tendon and a running suture, thereby preventing raw surfaces, to which adhesions may occur. The operation is short—forty minutes—there is almost no hemorrhage and shock, and convalescence is short also. The ligature placed around the uterine artery is outside the uterine tissue. The danger of intestinal adhesions is *nil.* The use of clamps on the broad ligament saves time.

Dr. Marcy of Boston was pleased with the introduction of gauze from above downward. He would suggest a continuous Lambert suture in closing the peritoneal surfaces. This becomes buried when traction is made upon it.

Dr. Henry P. Newman of Chicago read a paper on

THE TREATMENT OF INEVITABLE ABORTION.

He stated that 85 to 90 per cent. of married women abort at least once. The dangers are hemorrhage and sepsis, subinvolution of the uterus, uterine displacement, salpingitis, and ovaritis. He is opposed to the expectant plan of treatment. We have here a gynecologic and not an obstetric condition, hence he prefers to empty the uterus at once. His paper refers to expulsion of the fetus during the first three months. Kliehrssen records 150 cases of abortion treated by the active method, with only two deaths. Newman observes the same precaution as in doing an abdominal section.

Dr. Cartledge of Louisville presented a large ovarian cyst of thirteen-years' growth, taken from a woman thirty-seven years of age. The circumference of the woman at the umbilicus was 79 inches, the distance from the ensiform to the pubes was 49 inches. Twenty gallons of fluid were removed from the cyst before the anesthetic was given, and afterward ten gallons more were taken away. There were terrific adhesions, and the operation took two hours. The woman survived the operation until the sixth day, when internal obstruction developed, and she died the evening of the same day. The water removed weighed 240 pounds, the sac weighed 5 pounds more, making a total of 245 pounds, 50 pounds larger than any other reported cyst.

FOURTH DAY—JUNE 4TH.

Dr. Anna M. Fullerton of Philadelphia presented a paper, entitled

STUDIES IN GYNECOLOGY FROM THE SERVICE OF THE WOMAN'S HOSPITAL OF PHILADELPHIA.

She believes that in the future we must pay more attention to the constructive part of gynecology, the making of healthy women. The weakened tissues of young girls due to poor hygiene, predispose to menstrual and uterine disease. She does not believe that such cases require little local treatment, which, under the use of cocain is quite easy on account of the relaxed tissue. The tonicity of the uterine supports and muscle, and improvement of the blood are the indications in the treatment. All of the clothing should be loosened. If too tight, it produces uterine displacement with all its attendant ills. Abdominal breathing should be practised, and the judicious use of the bicycle to stimulate the abdominal muscles. In cases of prolapse of the uterus the patient herself may introduce a sterile silk sponge into the vagina, after anointing it with boroglycerid, and push it up by means of a glass rod into the posterior cul-de-sac. The condition of puerperal subinvolution predisposes to inflammation and structural change. Bicycle-riding in pregnancy in two cases resulted in one in an extremely easy labor, and a beneficial result in the other patient, who is still pregnant. The diet during pregnancy will largely influence the process of lactation.

Dr. J. Milton Duff of Pittsburg read a paper on

SOME REFLEX DISTURBANCES DUE TO PELVIC DISEASE, WITH REPORT OF CASES,

which was fully discussed. Dr. Kelly especially emphasizing the relation existing between the minor pelvic affections, especially retrodisplacement. and neurasthenia.

DR. ALBERT H. TUTTLE of Cambridge read a paper on the

INJURIES OF PARTURITION, THE TIME, METHOD, AND REASON FOR REPAIR,

and DR. J. M. EMMERT of Atlantic City presented a paper on

FIBROID TUMORS OF THE VAGINA, WITH REPORT OF CASE.

The remaining papers on the program were read by title.

REVIEWS.

TRANSACTIONS OF THE AMERICAN OPHTHALMOLOGICAL SOCIETY. Vol. VII. Part III. Thirty-second Annual Meeting. Hartford: Published by the Society, 1897.

THE amount of original scientific work presented at the last meeting of this Society is a convincing proof, were any needed, of the progressive spirit which animates the ophthalmologists of our country. To all interested in this specialty, as well as to many workers in the wider field of general medicine, this volume of the transactions will prove a store-house of valuable information. Where so much is offered, a choice is very difficult and a review of the important contributions would contain most of the forty or more papers mentioned in the table of contents. Among those of special interest are: "The Course and Prognosis of Orbital Tumors as Influenced by Surgical Operations for Their Removal," by Dr. C. S. Bull; "Ophthalmic Conditions in Case of Cerebellar Tumor," by Dr. C. A. Oliver; an able contribution on the "Use of Mercury in Traumatic irido-Choroiditis," by Drs. C. W. Kollock and S. Theobald's practical treatise on "Sterilization of Cataract Instruments." Successful application of Röntgen's discovery to ophthalmic diagnosis is reported in the cases of Drs. C. H. Williams and C. F. Clark.

A GUIDE TO THE CLINICAL EXAMINATION OF THE BLOOD FOR DIAGNOSTIC PURPOSES. By RICHARD C. CABOT, M.D. New York: William Wood & Co., 1897.

THE clinical examination of the blood has become a routine of such imperative necessity as a diagnostic aid and confirmer, that it is quite remarkable that no text-book on the subject has previously appeared in the English language. The present one, with some exceptions presently to be noted, covers the field very well and includes within its pages most of what is regarded as generally accepted truth.

The author, in the introduction, speaks of the scope and value of blood examinations. This is followed by a description of the methods of making such examinations, of the apparatus employed, and the different stains. The physiology and the general pathology of the blood are next considered, and the remainder of the book—more than half—is devoted to the special pathology of the blood. In these chapters, the variations in the constituents of this circulating fluid are discussed in detail.

Within the scope of this review it is impossible to do more than point out a few misconceptions and to utter a note of warning. The misleading results and misinterpretations after examination of the blood, which physicians acquire and are led into are due, as a rule, to imperfect training, and it is barely possible that a book like the one under consideration may serve only to increase general disrespect for minute clinical methods. Yet if the book is read and studied as it should be it may be the means of fostering a spirit of accuracy in clinical diagnosis among those who have considered themselves incompetent to follow the rapidly increasing methods of microscopic aids in diagnosis.

The author, unmindful of Ehrlich's admonition that the evaporation from the hand may change the granules in the white cells, recommends the holding of the cover-glass in the hand rather than in a forceps (p. 7). The figures on page 19 attributed to Dr. Franklin White, represent devices published by Ehrlich. No mention is made of fixing blood to be examined by the formalin method so much praised by recent observers. The valuable paper of Kraus of Graz, on the determination of the alkalinity of the blood is not referred to.

These are but minor criticisms, it is true, and it is not intended that they shall detract from the praise of the book; for it is a well-conceived, well-written, almost complete hand-book and deserves a wide circulation.

A large bibliography is appended to the work. The illustrations are fair only, most of the lithographic plates not being comparable to the originals from which they were borrowed. The printing and the binding are good.

A PICTORIAL ATLAS OF SKIN DISEASES AND SYPHILITIC AFFECTIONS. From models in the Museum of the Saint Louis Hospital, Paris. With text by BESNIER, FOURNIER, and others. Price $3.00 per part. Philadelphia: W. B. Saunders, 1897.

THE plates of this atlas are photolithochromes and the accuracy of their coloring is admirable. It is indeed remarkable when it is remembered that these illustrations are not taken from life, but from the models in the well-known collection of the Saint Louis Hospital in Paris. The explanatory text accompanying the plates contains a wood-cut copy of the plate with numbered lines pointing to the various lesions of which a detailed description is given. This serves to make the description extremely clear and instructive to the reader. A concise history of the case is usually given in the text, and the etiology, pathology, and treatment of the disease is briefly discussed. To the specialist in dermatology the text of this work will undoubtedly prove as attractive as the plates, and the views and opinions presented by the authors, as well as by the English editor, will be read with pleasure and profit.

The claim made by the publisher that the illustrations will chiefly represent typical cases of common diseases of the skin is hardly borne out in most of the parts. A glance at the captions appended to the plates will establish the fact that about one-half of the cases might be justly classed as rare or uncommon forms of cutaneous disease.

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